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ABSTRACT

This overview serves as an introduction to a series of ten curriculum modules that comprise a portion of the National Training and Development Service Urban Management Curriculum Development Project. The overview was designed to provide a generalized discussion of the field of government policy/program analysis and evaluation. The training program for municipal managers is based on a conception of public management that combines and expands the traditional approaches of public administration, policy analysis, comprehensive planning, public budgeting, and fiscal/economic analysis into a coordinated process capable of yielding rational public policies and decisions. The overview discusses policy analysis within the context of public administration, presents a systems theory perspective and its effects on policy analysis, and introduces the ten curriculum modules which comprise the program. (Author/MK)

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ADMINISTRATIVE POLICY ANALYSIS, BUDGETING, IMPLEMENTATION, AND EVALUATION:

Prepared by Dr. Gregory A. Daneke and
Dr. Alan Walter Steiss

An Overview
to
POLICY/PROGRAM ANALYSIS AND
EVALUATION TECHNIQUES Package VI

Developed by

CENTER FOR URBAN AND REGIONAL STUDIES
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Package VI

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ADMINISTRATIVE POLICY ANALYSIS
Chapter I

Considerable pressure has developed in recent years for more systematic techniques (or "systems" approaches) to resolve the many complex problems and issues confronting government and the constituent publics served by government. This emphasis can be seen in public sector applications of such management science techniques as systems analysis and operations research, in the advent of program budgeting, in the development and refinement of techniques of cost-benefit and cost-effectiveness analysis, in the growing attention to more systematic approaches to policy analysis and evaluation, and in the quest for a science of policy-making.

In short, in many quarters there is growing recognition of the need for a broader conception of public management--one which would combine and expand the traditional approaches of public administration, policy analysis, comprehensive planning, public budgeting, and fiscal/economic analysis into a coordinative process capable of yielding more rational public policies and decisions. Under this broader concept, effective public management must be a dynamic process, involving a systematic blending and directing of available human and physical resources to achieve public objectives. Its basic purpose should be to bring into focus and give consistency to the broad range of action programs of government. The effectiveness of such management must be measured by the results achieved (performance or outputs) and, more especially, by the response time required to make necessary adjustments when critical problems arise.

This overview is expressly designed to provide a generalized discussion of the field of policy/program analysis and evaluation as it might contribute to the emergence of this broader conception of public management. As such, it will also serve as an introduction to the learning packages or curriculum modules that comprise this portion of the NTDS Urban Management Curriculum Development Project, suggesting various interrelationships. The following range of topics is covered in detail by these modules:

(1) Strategic Planning and Goal Formulation Processes

(2) Issue Paper Techniques

(3) Management By Objectives

(4) Long-Range Forecasting Techniques

(5) Cost-Benefit and Cost-Effectiveness Analysis

(6) Performance/Program Budgeting Procedures

(7) Capital Facilities Planning and Debt Administration

(8) Productivity Measurement

(9) Performance Auditing

(10) Policy/Program Implementation Procedures

Quite obviously, these ten modules do not encompass the full scope of this new orientation of public management. Thus, it is also the purpose of this overview to sketch some of the parameters of the larger realm and to illustrate the integral character of these methodologies. Moreover, this discussion will strive to point out some of the opportunities and constraints that delimit the use of these techniques, as well as explore their broader implications and applications. Hopefully, the reader will come to a realization of the significant utility of policy/program analysis, tempered by an appreciation of its limits.

WHAT IS POLICY ANALYSIS?

The Coat Of Many Colors

While studies of public policy enjoy great currency, it is often difficult to amass these diverse contributions into a single frame of reference. The lexicography of the term public policy is truly amazing. Public policy has come to mean many things, and as a consequence, arriving at a clear and concise definition has become a monumental task. This lack of clarity is accounted for, in part, by the following factors:

(1) The concern for public policy is a fairly recent phenomenon.

(2) Unique academic disciplines and groups of practitioners have developed highly disparate approaches to the subject.

(3) The inquiries of individual research are unavoidably colored by personal preconceptions, as are the collective formulations of various disciplines.

(4) Many writers, when dealing with public policy, prefer to use other terms, such as decision, judgment, or choice, without making clear distinctions as to the similarities and differences implicit in these terms.

Thomas Dye, a political scientist, has suggested that "public policy is whatever governments choose to do or not to do,"[1] while engineers Roy Burke and James P. Heaney assert that public policy is "a series of incremental steps reflecting mutual adjustments among competing interests...

that attempt to move away from bads rather than toward goods."[2] Notice that these authors use the phrase "public policy" for rather divergent purposes. Political philospher Carl Friedrich conveys a more generic and perhaps more useful definition. He explains that: ". . . (public) policy is a proposed course of action of a person, group, or government within a given environment providing obstacles and opportunities which the policy was proposed to utilize and overcome in an effort to reach a goal or realize an objective or a purpose."[3]

Some writers have suggested that the term policy be reserved for relatively high order statements of intention and direction. Harold Lasswell, for example, suggests that: "The word 'policy' is commonly used to designate the most important choices made either in organized or in private life. . . . Hence, 'policy' is free of many of the undesirable connotations clustered about the word political, which is often believed to imply 'partisanship' or 'corruption.'"[4] As this definition implies, the concept of policy is (or should be) derived from some ethical or value premise(s).

It would appear that, as with many concepts, there is no universally accepted definition of this important term which is appearing with increasing frequency in the vocabular of the public service professions. For the purposes of further discussion, however, several critical terms are defined as follows:

(1) Value--an element of a shared symbolic system (referred to as a value system), acquired through social learning, which serves as a guide for the selection from among perceived alternatives of orientation.

(2) Goals--an articulation of values, formulated in light of identified issues and problems, toward the attainment of which policies and decisions are directed.

(3) Policy--(a) a broad guide to present and future decisions, selected in light of given conditions from a number of alternatives, (b) the actual decision or set of decisions designed to carry out the chosen course of actions; and (c) a projected program consisting of desired objectives (goals) and the means of achieving them.

(4) Decision--an intellectual assertion (judgment) as to appropriate ends, or appropriate means to achieve some ends, arrived at after careful consideration and deliberation of alternatives, and conditioned by an articulated policy or set of policies.

The study or analysis of public policy is an even more difficult concept to pin down, again a result of widely varying approaches to the subject. For lack of a better set of distinctions, these various approaches to policy analysis might be categorized into four general domains:

(1) Policy Studies

(2) Policy Planning

(3) Policy Science

(4) Policy Evaluation

It is essential to note that these categories are by no means mutually exclusive; yet, they do represent unique perspectives, and thus should be delineated briefly in the context of this current discussion.

Political Science and Policy Studies

Policy Studies have evolved, for the most part, as case studies and elaborate explanations of how policies are formulated and executed.[5] This approach finds its roots in political science, which in turn has borrowed extensively from the field of economics. It has been known under myriad labels such as the study of decision-making, policy-making, or merely public policy. Very closely aligned with the "behavioral movement" in political science, the policy studies approach is highly descriptive in emphasis. Thomas Dye, while recanting somewhat with regard to his earlier behavioral biases, still exhibits this descriptivism in the following statement:

> Today the focus of political science is shifting to public policy--to the description and explanation of the causes and consequences of government activity. This involves a policy; an assessment of the impact of environmental forces on the content of public policy; an analysis of the effects of various institutional arrangements and political processes on public policy; an inquiry into the consequences of various public policies; and an evaluation of the impact of public policies on the society in terms of both expected and unexpected consquences.[6]

This ambitious set of inquiries certainly implies evaluative and prescriptive elements, for how can one assess impacts without some criterion of success; such criteria, in turn, must be based upon normative judgments of what "ought to be." Nevertheless, Dye makes a point of admonishing that:

> Explaining the causes and consequences of various policies is not equivalent to prescribing what policies government ought to pursue. Learning why governments do what they do and what the consequences are is not the same as saying what governments ought to do, or bring about changes in what they do.[7]

Deviance from this descriptive role would be, in Dye's terms, "policy advocacy." Yet, it is interesting that even when political scientists have been at their descriptive best, there is a very subtle yet pervasive advocacy of the status quo. As Charles Taylor and others have suggested, even the more notable advocates of behavioralism in political science, such as David Easton, displayed value premises with regard to the viability of one type of political system (i.e. western democracy) over all others.[8]

Noticeably, as the relevancy crunch hit political science, as well as the other more traditional social sciences, a few scholars rejected the role of passive observer. Phillip O. Foss, represents this new emphasis in the following statement:[9]

> I recommend that a substantial number of political scientists become professionally involved in substantive policy area. . . By so doing, I believe we can enhance the status of the profession and also make a significant contribution toward improving the quality of public decisions. . . . Are such studies to replace some of our traditional areas of concern? No, they are in addition to - not in place of. Admittedly, this is an invitation to an even more strenuous life.

Unfortunately, this type of recommendation has gone largely unheeded by many academic programs, and thus the potential contribution of political science, with its vast knowledge of the transrational (e.g., political) aspects of policy, has been blunted by its insistence on amateur status.

The Planner as Policy Analyst

In direct contrast to the descriptive approach, planning as a profession has nearly always been in the business of making recommendations to government entities. While planning has its origins in the structural and design arts of engineering and architecture, what we have chosen to call Policy Planning is rapidly emerging as a multi-facetted field of applied social science. Much like other synthetic disciplines, such as public administration, planning suffers from an identity crises.[10] Larry Gamm suggests that there are at least four distinct "conceptions" of what that identity might be. These may be paraphrased as follows:[11]

(1) The Planner as Designer: This category focuses on the structural and visual arts imperatives, and is separate and distinct from decision-making processes. "The conceptual distinction between planning and decision-making continues to be supported in practice in many places by locating the planning function in non-partisan public commissions. In this formally non-political atmosphere, planners can concentrate on urban design and techniques for the codification and control of land uses--mapping, classification, development controls (zoning) and so on."

(2) The Planner as Social Activist: This concept of planning represents a rejection of the "value free" concept and stresses a closer liaison between planners and decision-makers. This concept is thus somewhat analogous to the "New Public Administration," in that it emphasizes reductions in "social suffering".

(3) Planner as Intervenor: This notion of planning not only emphasizes a closer relationship between the planner and the decision-maker, it demands a closer relationship between the planner and the public.

(4) Planner as Policy Analyst: This concept of planning is a fragile synthesis of all the elements listed above, and it underscores the new systematic analytical techniques. Here the planner is called upon to monitor and analyze the system and often initiate policy decisions.

As planner Anthony Catanese seems to suggest, the latter roles above are becoming increasingly significant. Catanese explains that "the early techniques used by planners were largely artistic and intuitive"; more recently, "the techniques began to enter into the area of policy analysis which necessitated the inclusion of more scientific techniques."[12] This substitution of analysis, management, and budgetary techniques for traditional design methods did not carry with it a sufficient change in mental attitude to allow planners to use their new tools effectively. They continued to envision themselves as aloof artists or experts, hovering above the debase political process. Yet the demand for some form of interaction with the subject matter of analysis (i.e. human beings) created unique hybrids such as participatory and advocacy planning.[13]

The Science of Policy

Also experiencing the throes of what might be called the policy technician/policy-maker controversy, as well as other more philosophical debates, is an approach known as Policy Science. Springing forth from the field of management science, it too is a synthetic discipline, drawing heavily from advancements in business, economics, engineering, and certain aspects of public administration. Given its lineage, policy science has exhibited an initial and lingering fascination with the application of mathematical and systems techniques to administrative decision processes. These techniques might include such diverse methodologies as: operations research, systems analysis, information theory, management cybernetics, decision theory, managerial economics, cost-benefit and cost-effectiveness, program budgeting, management by objectives (MBO), gaming and simulation, and network analysis.[14] Despite this prevailing focus, policy science also has its highly normative and non-quantitative strains.[15]

Threads of policy science can be traced back to cross-discipline research experiments during World War II, however White, Radnor, and Tansik mark its birth at the onset of federal PPBS (Planning Programming-Budgeting Systems).[16] In this regard, professional and intellectual origins of policy science also coincide with the movement to bring about an infusion of behavioral/social sciences into governmental decision processes. This notion of public policy as social intervention emerged in four books and two national conferences whose ideas gained popularity in the early 1970s.[17] The recommendations of this movement might be summarized as follows:

(1) Systematic recruitment and in-house training of personnel knowledge in the behavioral and social sciences to work in government at all levels.

(2) Inclusion of more social scientists on strategic advisory bodies in government, such as the Council of Economic Advisors and the Office of Science and Technology.

(3) Preparation by Congress and the Chief Executive of annual statements of long-range research needs and the establishments of a more vigorous research policy in the federal government.

(4) Increased support from the National Science Foundation for basic and applied research in the social and behavioral sciences.

(5) Better liaison and information brokerage mechanisms between government and the scientific community.

(6) Improved implementation of research findings through the meeting of academic and governmental researchers in common inquiries.

(7) Establishment of a Council of Social Advisors reporting to Congress and the President.

(8) A set of rotating professorships associated with the Library of Congress to advise Congress on social policy issues.

(9) Establishment and funding by government of: (1) a National Institute for Advanced Research in Public Policy and/or (b) a set of Graduate Schools of Applied Behavioral Science and/or (c) a number of Social Problems Research Institutes.

(10) Creation of a national social sciences organization, similar to the National Academy of Sciences.

To distinguish these movements toward a science of social policy from the mechanistic devices of management science, White, Radn[illegible], and Tansik invoke the following definition:

> Management science is viewed here as an accumulated body of empirically verified cause-effect relations, useful problem formulations, and data resources.... In management science the researchers usually can present and defend a logical reconstruction of the

> research, however inspirational the actual research may have been. Policy science is intended to involve, in contrast, the regular use of transrational elements, those that are not easily reconstructed into a logical, orderly presentation, such as political values, tactical judgements, or complicated balances among conflicting objectives.[18]

Such an all encompassing definition infers an appreciation of the great expanse of policy imperatives, many of which escape systematic, or more mathematically based forms of analysis. E. S. Quade mentions that operations research, systems analysis, cost-benefit, and cost-effectiveness are extremely useful in improving the basis of policy-making, "although they all tend to slight certain aspects such as the political and organizational problems associated with decision-making and its implementation."[19] Supposedly, policy science will overcome these analytical difficiencies.

This idea of a master science of public policy is not exactly new; it was first proposed by Harold Lasswell in 1951 and reiterated by scholars such as Yehezkel Dror for over twenty years.[20] Yet, despite continuing recommendations, policy science has remained highly analytical in technique and amorphous in organization. To the extend a common theme has emerged, it is that eventually the trans-rational (i.e., socio-political) will become rational; ergo the "science." In essence, policy science continues to exhibit a faith that the messy behavior of politicians, bureaucrats, and public interest groups can somehow be reduced to intelligible patterns and thus "plugged into" existing policy formulae. This belief, of course, is shared in varying degrees by those calling themselves policy scientists. The "kind-degree debate"[21] continues to be germane within the ill-defined discipline.

Policy Evaluation and Experimentation

Similar in origin, yet less grandiose in design is the burgeoning field of Policy Evaluation. Often thought of as a subcategory within previously mentioned approaches, evaluation is perhaps the most highly specialized component of policy analysis. While a derivate of management science, policy evaluation draws its unique character from the somewhat disparate contributions of fiscal analysis and accounting (economic indicators) and sociology (non-economic indicators).

The purpose of policy evaluation is to differentiate effective programs and policies from the ineffective. John Wholey provides a more procedural definition of this emphasis by suggesting that Policy Evaluation:[22]

(1) Assesses the effectiveness of an on-going program in achieving its objectives.

(2) Relies on principles of research design to distinguish a program's effect from those of other forces working in the situation.

(3) Aims at program improvement through program modification as contrasted to the formulation of new policy.

The primary focus of evaluation is on existing programs (through feedback on current and previous activities), although it may be used in an experimental or demonstration mode, as when experimental programs are mounted before the implementation of full-scale programs to determine whether such programs are likely to succeed.

Policy evaluation is very different from traditional post-audit examinations. Since a conventional post-audit seeks primarily to check the integrity and propriety of financial transactions, it tells the policymaker or program manager relatively little about the accomplishments of the program or project under investigation. As Quade explains:

> The conventional post audit tended to be backward-looking; it attempted to place blame. It contributed to improvement only in the sense that it served a deterrent function.... An evaluation, on the other hand, should be primarily forward-looking and it should help management to decide what to do next.[23]

The concept of Performance Auditing has been developed in recent years to augment the capabilities of the post-audit. Performance auditing attempts to generate an assessment of management objectives as well as establishing the fidelity of financial operations. A performance audit, in the words of the Comptroller General of the United States, should produce the following elements.[24]

(1) Financial Compliance--the traditional aspects of a conventional post-audit.

(2) Economy and Efficiency--seeks to identify any inefficiencies or uneconomical practices, including inadequacies in management information systems, administrative procedures, or organizational structure.

(3) Program Results--determines whether the desired results or benefits are being achieved, whether the objectives established by the legislature or other authorizing body are being met, and whether the agency has considered alternatives which might yield desired results at lower costs.

These standards now apply both to federal agencies and private contracting firms. Moreover, they are being advocated via federal assistance programs to local government. Yet it is well to note that the application of this or any other evaluative procedure depends upon: (1) clearly specified objectives, (2) measures of effectiveness, and (3) criteria for comparison.

These steps suggest that policy evaluation is greatly dependent upon other analytical processes. The focal point of policy evaluation, or what has often been called Evaluation Research, is the development of measures and methodologies of comparison. In response to diverse phenomena, measures or indicators have ranged from cost-benefit ratios through individual psychological states to aggregate "quality of life" quotions. Measurement and development of social or action-program indicators has become a vast and complex field in and of itself, thus the discussion here must be noticably abbreviated.[25] Suffice it to say that a great deal of work is still needed in the area of non-economic (social well-being/quality of life) accounting processes in order to fully operationalize many aspects of Evaluation Research.[26]

With regard to methods of comparison, Harry Hatry et al. summarize the basic techniques as follows.[27]

(1) Before vs. After Program Comparison--Compares program results from the same jurisdiction measured at two points in time: immediately before the program was implemented and at some appropriate time after implementation.

(2) Time Trend Projections of Pre- and Post-Program Data--Compares actual post-program data to estimated data projected from a number of time periods prior to the program.

(3) With and Without Comparisons--Compares data from jurisdictions (or population segments) where the program is operating with data from other jurisdictions (or population segments) where the program is not operating.

(4) Controlled Experimentation--Compares pre-selected, similar groups, some of whom are served and some of whom are not (or are served in different ways or with different levels of service). The critical aspect is that the comparison groups are pre-assigned before the program implementation so that they are as similar as possible except for the program treatment.

(5) Comparisons of Planned vs. Actual Performance--Compares actual, post-program data to targets set in prior years--either before program implementation or at any period since implementation.

The controlled experiment is generally regarded as the most sophisticated of evaluation strategies, but also the most difficult to carry out. In the absence of experimental conditions, statistical manipulations can induce the so-called Quasi-Experimental Design, but these approaches have had limited applications thus far.[28]

While these techniques represent great strides, evaluation technology has yet to realize a minute portion of its potential. A major constraint upon this realization is what we might label "the interface problem." Robert Clark, of the Community Services Administration points out that:

> Evaluation stands as a potentially significant contribution to social policy formation. Unless, however, it is keyed to specific information requirements and decisionmaking schedules of those engaged in policy processes, it risks being irrelevant--a monument to what might have been.[29]

James Anderson further outlines the following constraints upon systematic evaluation:[30] (1) the uncertainty of goals in many public programs, (2) the problem of confirming causality, (3) the diffuse impacts of public policy, (4) problems of data acquisition, and (5) the resistance of public officials to formal evaluations.[31] This last item is likely to be the most profound obstacle; i.e., many public agencies simply do not want to be evaluated. Nevertheless, policy evaluation is a critical ingredient to more coherent public policy, and thus it will remain a paramount concern of all the various realms of policy analysis.

This brief overview of the various pursuits of policy analysis does not, of course, do justice to the wide range of elements involved. Moreover, the unique contributions of other fields and disciplines, such as geography, education, psychology, philosophy, anthropology, not to mention the natural or physical sciences[32] have been largely excluded. This selective perception is somewhat justified by a desire to isolate those elements which appear to be having the greatest impact upon the professional uses of policy analysis. Suffice it to say that policy analysis is a broadly interdisciplinary enterprise drawing upon nearly all the applied science technologies.

A Summary Statement

It would seem appropriate and necessary to conclude this initial foraging expedition into its various realms with a definition of Policy Analysis as it is used in the remainder of this presentation. Policy analysis is a systematic process, involving the delineation of pertinent problems and issues, the clarification of goals and objectives relevant to these problems, the identification and comparison of available alternative courses of action (often requiring the design and synthesis of new alternatives), and the determination of the optimum means (resources) necessary to attain the desired goals and objectives. Although the policy analysis process may be descriptive or prescriptive, its basic aim is to develop guidelines to assist public policy-makers in the exercise of their judgmental responsibilities regarding action commitments.

As will become increasingly apparent, the "systemic perspective" advocated in this discussion places greater emphasis on the professional applications of policy analysis and less on its scientific completeness.

As Arnold Meltsner has observed, this type of practitioner orientation differs significantly from the more visionary desires of the policy scientist.[33] This distinction also implies an added degree of pragmatism. In situations where mathematical techniques are appropriate, as well as politically and organizationally feasible, the public manager should attempt to apply them. When these conditions do not prevail, one "muddles through" as usual. In other words, policy analysis entails large measures of intuitive judgment, political trade-off and just plain guesswork. It is not synonomous with quantitative or empirical assessment. Rather, it is a generalized approach to problem-solving that uses whatever techniques are possible (and feasible) given institutional constraints. Yet, it is also implies the creation of strategies and methods for reducing problem constraints and social uncertainties.

THE PROFESSIONALIZATION OF POLICY ANALYSIS

The Policy/Administration Dichotomy Defunct

At several junctures in the discussion thus far reference has been made to the professional uses of policy-analysis; these applications have been contrasted with the more academic perspectives. This discussion, of course, raises the question of who exactly are these professionals? Broadly defined, there are any number of policy analysts, including perhaps: a senator, a judge, a town councilperson, a Sierra Club member, etc. Yet, our notion of policy analysis implies a largely administrative process. Immediately, the inquiry is launched, "if policy analysis is designed to improve policy-making, then why would administration--which has no constitutional basis for policy-making--be the principal user of analysis?" Although an excellent question, it is based upon a rather outmoded theory of the relationship between administrative process and policy-making.

Decision-makers in government are usually well identified. They include elected and appointed officials, heads of departments, agencies, and bureaus, and program managers. Congress and other legislative bodies obviously make many important decisions, both regulative and allocative. To distinguish them from other decision-makers, elected officials often are called policy-makers. Such arbitrary labelling, however, begs the critical question of who really makes policy decisions.

The traditional "separation of functions" between policy-makers and administrators was a standard in the public administrator's repertoire for several decades. Efforts to make a clearer distinction between the policy-maker and the policy administrator can be traced back to the writings of Thomas Paine. Paine suggested in Rights of Man that there are two primary functions in government--legislating, or enacting law; and executing, or administering law. These early concepts are also reflected in the conflict between the Federalist (Hamilton) and the Democratic (Jefferson) ideals of government. For Jefferson, administrative power was a great threat to democracy; in his view, the nation's strength lay in an enlightened, responsible, fully-participating citizenry. Hamilton, on the other hand, believed that a viable democracy was synonymous with a strong, highly centralized administrative system. A strong executive function, according to Hamilton, implies unity, duration, adequate provision for support, and power commensurate with responsibility.

The more contemporary formulations of the policy-administration dichotomy were introduced by Frank Goodnow and Woodrow Wilson in the first clear break with a priori rationalism of late nineteenth century political science.[34] Wilson, writing in 1887 while a member of the Princeton University faculty, suggested that all government could be divided into "politics" and "administration." His conception assigned to certain units of government the function of policy-making and control, while reserving for others the expert task of executing these policies. Wilson asserted that,

> the field of administration is a field of business. It is removed from the hurry and strife of politics; it at most points stands apart even from the debatable ground of constitutional study. It is a part of the political life only as the methods of the counting-house are part of the life of society; only as the machinery is part of the manufactured product.[35]

These formulations led Goodnow to assert that the activities of government could not be accurately classified under the traditional triad of executive, judicial, and legislative; rather, there were in all governments two primary or ultimate functions--politics, or "the expression of the will of the state," and administration, or "the execution of that will."[36] While Goodnow concluded that the operations of government could be differentiated in terms of policy and administration, he also stated that the authorities or agencies to which such operations are entrusted could not be completely separated.

This important distinction in the concepts of Goodnow was quickly lost, however, as other writers began to contribute to the literature of the emerging field of public administration. W. F. Willoughby, for example, attempted to give even more distinct status to administration by not only marking it off from policy-making, but by setting it up as a fourth branch of government.[37] Soon the emphasis of public administrators shifted to concrete agencies which were assumed to carry out administrative functions, as opposed to policy-making bodies such as the legislature.

The separation of functions doctrine served early students of public administration well. It enabled them to distinguish and to emphasize that part of government in which they had the most interest, i.e., the execution of decisions. It justified a new emphasis on the proper professional or "scientific" training for administrative work. More important, it lent support to the notion that, if administration is a function distinct from politics, then politicians should not be permitted to meddle or interfere with administration.

With the coming of the Roosevelt administration in the thirties, however, the line between administration and policy began to be readjusted, and by the end of World War II, a more flexible definition of the relationship between policy and administration had emerged. The rigid, even dogmatic, separation of politics and administration was almost wholly abandoned, at least in a conceptual sense. It has become proper to regard administration as a process diffused by or permeated with politics--both the contest for power and the making of policy. As Norton Long suggests:[38]

> However attractive an administration receiving its values from political policy-makers may be, it has one fatal flaw. It does not accord with the facts of administrative life. Nor is it likely to. In fact, it is highly dubious even as an ideal. Though the quest for science, mathematical precision and certainty has an undeniable psychological appeal, it runs the risk of becoming a fastidious piece of ivory-tower escapism.

Nicholas Henry has observed that "For the better part of the twentieth century, the public bureaucracy has been the locus of public policy formation and the major determinant of where this country is going."[39] Legislative bodies, from the Congress to the township council, have increasingly resorted to the administrative process for the development and distribution of public law. Administrative agencies have been endowed with authority to determine or otherwise affect private rights, obligations, and interests by either rule or decision. This increased reliance on administrative process has come about for a variety of reasons, some of which might be summarized as follows:

(1) The rapidity of social rate change and the limited adaptive ability of traditional institutions.

(2) Complex societal problems engender the need for highly specialized or technical expertise.

(3) Legislative bodies faced with unique challenges respond with generic or vaguely defined policies at best. The administrative process of adding specificity to policies often determines the policy to a large extent. [40]

(4) Legislators often seek to fragment policies, cutting off portions of the benefits for their individual constituencies. By parceling policies out to administrative agencies with whom they have favorable relationships, they avoid an open contest with their fellow legislators.[41]

(5) The New Federalism, with its revenue sharing and administrative aid programs, may have stimulated some local decision-making bodies to resort to more extensive administrative policy processes. As a result, professionalism in local government has grown geometrically.

Recognition of the policy-making aspects of administration does not imply that all policy determinates are internalized in the public agency. A careful examination of nearly any policy would lead to the conclusion that external political actors usually have the final if not the initial say. Nevertheless, whether administrators carry out policy-making responsibilities through the implementation role, or aid legislators through the development role, it is administrators who are most often called upon to utilize policy analysis.

Rationalism vs. Incrementalism

Despite the wide-spread recognition of the administrative policy process by academicians, many practitioners continue to cling to traditional lines of demarcation. As suggested earlier, this particularly true in professions such as planning. Thus, in practice, the appropriate interface of politics and administration is still quite nebulous. This lack of clarity is manifest in controversy over the proper role of analysis. One prominent debate in this on-going struggle is that of the rational model vs. the incremental model. Perhaps failing prey to the "strawman fallacy", James Anderson provides the following list of presuppositions associated with the rational model of decision-making:[42]

(1) The decision-maker is confronted with a given problem that can be separated from other problems or at least considered meaningfully in comparison with them.

(2) The goals, values, or objectives that guide the decision-maker are clarified and ranked according to the importance.

(3) The various alternatives for dealing with the problem are examined.

(4) The consequences (costs and benefits) that would follow from the selection of each alternative are investigated.

(5) Each alternative, and its attendant consequences, can be compared with the other alternatives.

(6) The decision-maker will choose that alternative, and its consequences, that maximizes the attainment of his goals, values, or objectives.

This definition of rationality is somewhat an "ideal type", and thus, highly vulnerable to criticism. Charles Lindblom and others, for example, were quick to point out that decision-makers are rarely faced with clear cut problems. Moreover, information is a scarce and thus an expensive commodity, and decision-makers are seldom in a position to incur the total cost. Even if complete information were possible, limits upon human comprehension would certainly intervene.

To account for these limitations upon rationality, a counter-theory in the form of the incremental model has been formulated. Anderson provides the following summary of its elements:[43]

(1) The selection of goals or objectives and the empirical analysis of the action needed to attain them are closely interwined with, rather than distinct from, one another.

(2) The decision-maker considers only some of the alternatives for dealing with a problem, and these will differ only incrementally (i.e., marginally) from existing policies.

(3) For each alternative only a limited number of "important" consequences are evaluated.

(4) The problem confronting the decision-maker is continually redefined. Incrementalism allows for countless ends-means and means-ends adjustments that have the effect of making the problem more manageable.

(5) There is no single decision or "right" solution for a problem. The test of a good decision is that various analysts find themselves directly agreeing on it, without agreeing that the decision is the most appropriate means to an agreed objective.

(6) Incremental decision-making is essentially remedial and is geared more to the amelioration of present, concrete social imperfections than to the promotion of future social goals.

To reconcile these differences of opinion, Amatai Etzioni offers an alternative theory entitled "Mixed Scanning". This notion implies that, in situations where the decision-maker has the time and information, he will pursue a comprehensive approach; in other situations he "muddles through". Etzioni suggests the following justifications for his approach:[41]

(1) Incrementalism is a theory which is self-serving to special interests.

(2) Great and fundamental decisions produce a need for the rational approach.

(3) The two approaches are actually complementary, minimizing difficiencies in one another.

(4) Information processing can substantially reduce rational limitations.

Noticibly, some of the points of contention between approaches are normative rather than empirical. For example, political scientists, such as Aaron Wildavsky, contend that rational approaches are patently anti-democratic and will never jell with political processes.[45] Meanwhile, incrementalism, which was designed in part to describe disjointed bargaining processes extended its arguments to defend these processes. A decision that follows the rules of bargaining and consensus is by definition a "good decision."

This emphasis resulted from an association with the reigning theories of political science which held that, through the staged conflict of special interest, the "public interest" would somehow come out in the wash. Only a handful of young turks, such as Theodore Lowi, were willing to suggest that description had become prescription and that political science had become an apologist for the status quo, through what Lowi calls "interest group liberalism".[46] As Lowi and others have contended, "liberal governments cannot plan" (or implement a program budget for that matter), or at least they seem to have a difficult time of it. This obstacle to more effective planning and budgeting is a result of an ingrained philosophy that places tremendous emphasis on the procedural rules of the game and largely ignores the outcomes.

In the era of PPBS, a compromise was sought in the rationalism-incrementalism dichotomy by suggesting that public decisions could be better made by employing rational devices as aids to the bargaining process.[47] E. S. Quade, who takes a somewhat modest view of rational capability, still rejects this underlaborer idea in which "analysis is seen largely as a device to help a decision-maker by contributing to his bargaining position.[48] Along these lines, there is also the highly familiar situation in which the analyst is commissioned to provide confirmation of an existing decision. Certainly, analysis has greater potential.

Rejecting this role does not imply that analysis and planning are completely divorced from political decision-making. As Carl Friedrich points out, "decision-making, policy, and planning are closely tied... these three processes cannot be considered in isolation."[49] Friedrich proceeds to explain that:[50]

> Planning seeks to link and interrelate various aspects of a field of public policy or maybe several aspects . . . . Therefore planning is closely linked to the question of the role of the expert--a question of special urgency in a highly industrialized democratic society . . . . It has often been asserted that democracy and planning are incompatible and cannot be combined. . . . Suffice it to say here that, if this were true, the future chances of democracy would be poor, for planning is essential for many matters which must be decided in an advanced, modern society.

Rationalism Vs. Transrationalism

While the arguments for enhancing the rationality of public decision-making are quite strong, equally valid are the cautions against a technocratic society and the reminders regarding the inherent limitations of rational analysis. Opinions as to the proper interface of rationality and transrationality (socio-political considerations) range across a broad spectrum of ideas and ideologies. This variety of attitudes might be represented through the use of C. West Churchman's four approaches to the use of systems,[51] a concept to be explored later in greater depth.

The perspective developed here suggests that there are both rational and transrational aspects to analysis, perhaps even irrational. But, it does not accept the defeatist attitude that all socio-political issues escape rational assessment. Moreover, while there are many problems beyond the scope of systematic analysis, the level of social complexity in itself is not necessarily the most important criterion of applicability. Kenneth Kramer suggests that, "the greatest potential benefit of policy analysis is in just those areas where problems are the most complex and the risks highest, the uncertainties greatest, and the results most likely to be seen only over an extended time period."[53]

Although systematic analysis has a wide range of possible applications, its parameters are not unlimited. E. S. Quade states that analysis is most readily applicable to the following types of problems:[54]

(1) Improvements in Efficiency of Operations. "Typical examples are those involved in helping the New York City Fire Department provide an improved level of protection within its budget (i.e., it is clear what efficiency will entail) . . . . The situation can be modeled by a well known technique such as linear programming or queuing theory (operations research) . . . . An optimum solution is then obtained by means of systematic computational routine."

(2) Resource Allocations. "Ideally, for any total use of resources, one would desire an allocation of funds among programs such that the last dollar used in each program would yield equal benefits. . . . The disciplines used to tackle the problems in this category go by various names but the approaches and methods are basically the same. Systems analysis is coming to be a most commonly used name for policy analysis of this type but the terms cost-benefit analysis, cost effectiveness analysis, and operations research are also applied."

(3) Program Evaluations. "Good public administration requires that effective programs, both ongoing and proposed, be identified and that ineffective ones be terminated . . . . The analytical techniques used in evaluation (except for experimental design) are basically those used for resource allocation or to increase efficiency."

(4) Planning and Budgeting. "Analysis is needed for such tasks as: (1) fairly routine evaluations with a view to changing the resource allocation; (2) comparisons of the costs and benefits of proposed programs; (3) the investigation of special issues (such as Environmental Impact); and (4) detailed preparation of new programs."

(5) Strategic Choice. "Such questions as how to increase citizen participation in local government, or what strategy to use in introducing a management information system in a government agency."

Having set forth some basic capabilities, Quade also offers the following disclaimers under the heading "What Policy Analysis Is Not":[55]

(1) Policy analysis is not an exact science nor can it become one.

(2) Policy analysis is not a panacea for the defects in public decisions.

(3) Policy analysis is not a tool for advocacy on the part of the analyst.

To visualize graphically these and other limitations, as well as portray the capabilities of analysis, Kenneth Kraemer has constructed the following chart:[56]

Figure 1

Dimensions For Comparison	Types of problems		
	Operational	Programming (management)	Development (planning)
Objectives	Single objectives; known or readily defined; agreement easy; efficiency-oriented objectives.	Multiple objectives; difficult to define; conflicting; consus difficult to achieve; effectiveness-oriented objectives.	Setting objectives is key portion; values-oriented objectives.
Criteria	Single criterion can usually be defined and quantified and indicates best solution.	Multiple criteria; choice may depend on intuitive evaluation of net benefit from costs and benefits.	Evaluation of alternatives largely intuitive but may be aided by expert advice or by qualitative models.
Alternatives	Many alternatives available and usually easy to identify.	Alternatives limited; new alternatives often not very different from existing ones; inventing alternatives is difficult.	Inventing alternatives is key problem.
Models	Standard models exist and can be applied to many situations; machine or man-machine models.	Same as operational problems plus ad hoc (computer and gaming) models; man-machine or behavioral models.	Same as management problems plus verbal models; political and social models.
Techniques	Mathematical, statistical, economic.	Same as operational problems plus qualitative techniques, e.g., simulation and gaming.	Same as management problems plus Delphi, scenarios, paradigms, etc.
Quantification	Quantifiable.	Quantitative-qualitative.	Largely qualitative; may involve quantification of parts of the problem.
Time	Short-term.	Mid-range.	Long-range.
Uncertainity	Uncertainty statistically describable.	Ranges of uncertainty describable.	May only be able to indicate that uncertainty exist.
Solutions[1]	Solutions can be derived analytically; usually a best one.	Solutions usually derived by trial and error or approximation; sometimes solution not possible--best obtainable may be aid to logical thinking about a problem.	Same as management problems; often only insight, understanding, elucidation sought--not solutions.
Examples	Stock control; personnel assignment routing; replacement; maintenance.	Budgeting; organization design; scheduling; financial and operations management; certain planning problems.	Policies planning; transportation, building and other systems development; alternative futures.

[1] As used here, solution refers to the notion of a single best answer.

Kraemer's observations are based upon his perception of the three basic types of analytical problems: operational, programming and development. Operational processes entail the application of mathematical techniques to simplistic resource allocation or efficiency problems with fairly clear-cut objectives. Programming processes, on the other hand, involve more complex calculations and often include intuitive judgement in reference to the ordering and weighting of multiple objectives. Development of planning processes requires much higher degrees of intuitive judgement in the generation and articulation of relevant alternatives. These alternatives are, in turn, used to solidify societal objectives. This final set of processes or analytical problems is, of course, the most difficult and is thus becoming the focal point for professional policy analysts. But this focus is not isolated from the other analytical processes, rather the quantitative and management oriented pursuits provide complementary indices for dealing with the complex social problems.

In sum, the broad and amorphous professional pursuit known as policy analysis is comprised of the following list of characteristics:

(1) It emphasizes rational assessment.

(2) It seeks to clarify objectives.

(3) It seeks to generate all possible alternatives.

(4) It attempts to evaluate problems as wholes with root causes and labyrinthine implications.

(5) It attempts to assess both beneficial and negative impacts (spillover and externalities).

(6) It recognizes uncertainty and attempts to reduce it.

(7) It also recognizes transrationality in the form of political, social, and organizational realities and attempts to account for these through a variety of methods from strategic (participatory) planning, through elaborate modeling and forecasting, to intuitive judgements.

This description accepts the fact that policy analysis is bounded by the limitations upon rationality which cloud objectives, defy measurement, exclude data collection, and ellude even intuitive assessment. It also accepts the critical intervention of organizational behavior (and pathologies) and political feasibility. Yet to the extent that man is capable of reasoned and responsive behavior, these limitations also are subject to systematic investigation, and thus become an extension of policy analysis.

POLICY ANALYSIS AS ADMINISTRATIVE REFORM

The Bureaucratic Problem

In these waning years of the twentieth century, the phrase bureaucracy has become tanamount to obscenity. The recognition that administrators often make policy, as explored above, also brings the realization that mammoth, impersonal, entities influence a great portion of our daily lives. Moreover, that influence is not always viewed as beneficial. Awareness of these ill-effects, or merely the fact that the programs of public agencies have failed to meet public expectations, has stimulated mountainous amounts of literature on bureaucratic pathologies and bureaucratic reform.[57]

In the more recent literature of bureaucratic reform there seems to be a good deal of disagreement on questions such as bureaucratic discretion. Some scholars, such as Theodore Lowi[58] and Kenneth Kulp Davis,[59] call for severe constraints upon bureaucratic discretion, while others, such as the advocates of the "New Public Administration", demand what amounts to increased freedom and discretion for administrators in order to facilitate creative and self-actualizing experiences.[60]

This schizophrenia is somewhat explained by James Q. Wilson, who suggests that the bureaucratic problem is not one but many problems. Furthermore, solutions to one problem may exacerbate another.[61] This multiplicity of problems results from the fact that we demand administration to be both responsible (following set procedures) and responsive (able to adjust to special cases). Martin Rein discovered, with regard to welfare clients, that most of them desired ruled governed behavior when faced with arbitration, but wanted discretion exercised when faced with rigidity.[62]

Initially this appears to be a "cake and eat it too" pheonomenon, but a useful distinction can be drawn between two general sets of demands made upon the system; i.e., performance demands vs. decision demands. Performance demands require consistency, stability, efficiency, fiscal integrity, etc. Meanwhile, decision demands require flexibility, humanity, responsiveness, and generally prudential behavior.

Policy analysis is most often designed to cope with performance demands. Unfortunately, these are often made indistinguishable from decisional requirements. Therefore, analysis must also, at times, come to grips with response problems as well as process problems. In an attempt to disaggregate some of these analytical dimensions as well as to display some of the important avenues of bureaucratic reform, the following typology seems useful. Here we will categorize reform elements as to (1) whether they are internal or external to organization and (2) whether they are formal or informal processes.

Internal/Formal: Traditionalism vs. Synergy

The internal/formal constraints upon bureaucratic behavior are by far the most traditional. They have relied upon such concepts as executive leadership, centralized authority, hierarchical administration, chain of command, and substantially rule governed behavior; i.e., the classical elements of bureaucratic theory.[63] These canons were augmented with other principles of "good" administration such as "span of control," to form a long standing tradition of bureaucratic reform.

Frederick Taylor's *Principles of Scientific Management* (1911) with its emphasis on "time and motion studies" and the "man-as-machine," concept,[64] gradually gave way to a *Science of Administration* (1937). Under this rubric Gulick and Urwick brought us POSDCORB (Planning, Organizing, Staffing, Directing, Coordinating, Reporting, Budgeting).[65] POSDCORB was concerned with organizing administration for maximum efficiency through the traditional hierarchical leadership structure. Mooney and Reiley (1939) were to call this notion of hierarchy the "scalar principle", and added to it three more: Coordinative, functional (division of labor) and the famed distinction between line and staff. Mooney and Reiley also suggested the need for careful organizational indoctrination to build a common ethos, using as their model the catholic church.[66]

Following the "Hawthrone Studies" of the late 1930s, Tayloristic *a priorisms* about the mechanistic behavior were substantially challenged.[67] Organizational theorists began to discuss the possibility that persons within bureaucracies have a mixture of personal motivations, and one of the more essential is Abraham Maslow's motivational concept, "self-actualization."[68] In essence, employees are not totally concerned with economic gain, rather they are motivated by job satisfaction, personal esteem, etc. Thus, solutions to the bureaucratic problem shifted from command leadership to synergistic leadership; i.e., discovering ways to bring individual goals into harmony with organizational goals and missions.

This synergistic approach to administrative reform uses the label *Organizational Development* (OD), or in some cases the more generic title, *Organizational Behavior* (OB). OD, in particular, is concerned with developing strategies for "organizational health," through "planned change" and cooperative management.[69] OD grew out of the work of sociologists who were hired as consultants to major organizations such as Esso and Union Carbide. From their efforts came the concept of "managerial grid" and the famed T-group (intergroup) approach.[70] These approaches were, in turn, applied by Chris Argyris in his attempt to resolve conflicts between foreign service and administrative officers in the U. S. State Department.[71]

The basic concepts of OD can be summarized as follows:

(1) Persons within organizations have complex motivations, and the pursuit of individual objectives can often prevent an organization from achieving its policy objectives.

(2) Leadership should strive to develop better interpersonal relationships within the organizations.

(3) Leadership should develop more effective conflict management through interactive strategies.

(4) Leadership should be willing to sacrifice structure for the sake of greater individual expression and creativity.

These concepts are manifest in "task team management," "sensitivity training," "intergroup and interpersonal cooperation strategies," etc. O.D. measures have also been incorporated into more general and systematic strategies such as "Management by Objectives" (MBO).[72]

Yet despite these humanistic attempts, the bulk of systematic analysis harkens back to the more mechanistic moorings. For the most part analytical technologies such as cost-effectiveness, program budgeting, productivity assessment, performance auditing and general policy evaluation, are designed to strenghten leadership and standardize management procedures. By the same token, implementation strategies such as P.E.R.T. (Performance Evaluation and Review Technique) and C.P.M. (Critical Path Method) are remotely analogous to the "time and motion studies" of Frederick Taylor. Key distinctions might be that the new machine devices are much more easily integrated with humanistic communication and responsibility patterns, and, as we will develop at greater length, are more susceptible to external monitoring.

Nevertheless, neither the efficiency/effectiveness procedures of policy analysis nor the other internal reform mechanisms guarantee responsive administration. Thus, we proceed to investigate other avenues of reform in the hope of buttressing the internal elements.

Internal/Informal: Guerilla Tactics

Very similar in emphasis to the new synergistic formalism (although a good deal less manipulative) are the approaches we have chosen to label Internal/Informal. Rather than focusing upon leadership, these approaches invoke personal and professional ethics.

The behavioral challenge to the classical theories of administration distilled an awareness of the informal structure of organization. Performance standards, it was discovered, are often more the result of consensual (peer group) arrangement than executive edict. Moreover, assigned status had little to do with actual patterns of authority. The shadow organization rarely conformed to any organizational chart. Organizational Behavior strives to bring this shadow (informal) organization into concord with the actual (formal) organization. On the other hand, informal strategies such as the "New Public Administration" seem to want to use the shadow organization as a medium of transformation.

The birth of the "New P.A." is usually associated with the "Minnowbrook Conference", a meeting of "young turks" sponsored by the Maxwell School of Syracuse University in 1968. Todd LaPorte of U. C. Berkeley suggests that the purpose of the New P.A. is to address the "normative aridity" of the Old P.A. and focus on the reduction of "economic, social, and psychic suffering and the enhancement of life opportunities for those inside and outside the organization."[74]

Life opportunities or self-actualization within bureaucracy normally entails that the individual is given creative space and autonomy. The much more difficult and often dichotomous process of achieving greater life opportunities for the clients of bureaucracy is accomplished through advocacy administration, which is analogous to advocacy planning, mentioned earlier.

In general, the New P.A. has produced a decidedly moral tone, admonishing new professional ethics of humanistic behavior. Along these lines there has even been a conscious effort to rejuvenate normative theory in reference policy development. Particularly in those situations where intuitive judgement is at its peak, the advocates of the New P.A. invoke the application of normative principles such as John Rawls' concept of "distributive justice."[75]

While theorists and practioners of the "New Personnel Administration" are quite obviously influenced by the New P.A. they are also cognizant of competing and perhaps conflicting trends. Richard Chapman and Frederic Cleaveland point out that the growing demands of technical specialization, unionization (collective bargaining) may be antithetical to creativity and responsiveness.[76]

In response to these mounting cross-pressures, several theorists advise the creation of a new civil service made up of broadly circulating generalists. These new administrators could exercise social consciousness without falling prey to the technocratic mentality of the survival instincts of a particular agency.[77]

It is well to note, as does Michael Harmon, that advocacy is not synonomous with responsiveness. Harmon points up the need to temper he activity of the "change agent" with greater direct public access, a process he calls "Proactive" administration.[78] In essence, the energy of internal reform processes should be linked to external elements (e.g., public involvement, strategic planning, citizen feedback) as well as mechanisms which guarantee administrative due process. It is to these devices that we now turn our attention.

External/Formal: Checks Without Balances

External/Formal constraints upon bureaucratic discretion actually pre-date the emergence of bureaucracy as we know it. For the most part, the constraints find their logical underpinning in the federal and the various state constitutions. In essence, to the extent that executive powers are buffetted and checked by legislative and judicial sanctions, administrative processes are also checked. Of course, neither the founding fathers nor astute state legislators could have predicted the proliferation of bureaus and agencies separate and autonamous from the executives they were designated to serve. Over the years measures have been developed to buttress original checks and balances, but the rapid growth of bureaucracy quite often outstrips them. This trend has been accelerated by the willful acts of legislatures--who, as alluded to previously, have given much of their policy prerogative over to the administrative process.

Lowi proposes that legislatures be forced by the courts to assume their policy-making responsibility. This process, which he calls "judicial democracy", would entail the courts reviewing and requesting added legislative specificity.[79] The assumption here is that once given clear programs instead of vague mandates, the administrators discretionary field would be much more tightly circumscribed, and legislative review (oversight) would be made easier. While this is perhaps a truism, there are obvious logistical and procedural limitations upon full scale judicial intervention as well as upon legislative responsibility.

The courts being ill-equipped to handle Lowi's scheme does not necessarily imply they have been inactive in the area of bureaucratic reform. For example, it has been primarily the courts that have made the Environmental Impact Statement (EIS) a viable procedural safeguard. As Frederick R. Anderson suggests, it is the judicial process which has put the teeth in the various action-forcing provisions of NEPA (The National Environmental Protection Act) thereby calling to question many bureaucratic procedures which were less than open and representative.[80]

Despite examples of this type, the parameters of judicial intervention and the level of expertise prevent the court from becoming a highly effective constraint upon administrative policy-making. Some scholars have suggested that since courts are actually policy-making agencies, they should have the same type of analytical and planning staff support as executive and legislative bodies.[81]

In this critical area of analytical staff, legislative bodies have made considerable progress. While unwilling, generally speaking, to reorganize their structure (committees and sub-committees) along the line of specified policy areas, legislatures have taken steps to improve their comprehension of administrative analysis and thus, their oversight capability. Examples from the national legislature would have to include: (1) the Budget Committees in both houses, (2) a Congressional Research service and the General Accounting Office, (4) and the establishment in the house of new oversight sub-committees for prominant standing committees.[82]

It is essential to note that these staffing measures were taken to aid the legislative branch in its policy-formation and review functions, and not to convert it to systematic policy analysis. Daniel Dreyfus, Congressional Consultant, points out that,[83]

> Congress is often criticized because it does not engage in sufficient, independent, scientific and orderly policy analysis accompanied by all of the accoutrements of data collection, technical advice and comprehensive exposition of analysis.... [However] the circumstances of the Congressional role make a rigorous application of policy research nearly impossible and practically unwarranted.

Legislative bodies are designed to work out broad accommodations of interests and not necessarily to discover the most efficient or effective policy alternative. Nevertheless, improving both legislative and administrative analytical capability may provide a common ground upon which alternatives can be assessed and public values and preferences attached. Recognizing however, that legislative processes may not always be indicative of that nebulous substance known as "the public interest," perhaps the administrative process should concern itself with identifying preferences as well. To this aspect we now turn.

External/Informal: Public Access and Administrative Policy

External/Informal processes for bringing about more responsive administration have received a good deal of attention in recent years. There is an increasing realization that standardized channels of political expression are inadequate for communicating demands to administrative policy-makers. Herbert Kaufman suggests that the American populace moves through cycles of "neutral competence" (trust in administration) "executive leadership" and "representativeness."[84] Having just concluded an era in which executive leadership was a dominant theme, we have now shifted into a more participatory epoch. Sidney Verba and Norman Nie point out that the general decline in voter allegiance is being met by a increase in direct community level activism.[85]

With miraculous speed this participatory attitude was translated into policy. Daniel Moynihan points out that direct public involvement moved swiftly, "from the university lecture room and professional journal to the halls of Congress and the statute books of the national government."[86] Given the time taken in development, the mixed motives of legislative support, and the generally ill-concerned and reluctant implementation, it is understandable that Moyniham would label early attempts a "maximum feasible misunderstanding."[87] Retrospective assessments of the early participatory efforts in Model Cities and the War on Poverty are varied. Many scholars suggest that direct participation was a dismal failure because it did not forge a causal linkage between citizen demands and policy outcomes.[88] Yet others, such as Biliana Ambrecht and Richard Cole, point out that while extrinsic or instrumental outcomes were few, the intrinsic values of participation are considerable. They document a significant rise in the sense of personal efficacy and the creation of indigenous leadership structures as results of community level participation.[89]

In spite of the mixed record of the 1960s, public access of one form or another has become a pre-eminent requirement in nearly every federal program and agency, and in many state and local practices as well. Following are some of the mechanisms that have been developed in response to these requirements:

(1) Ombudsmen and Mini City Halls.[90]

(2) Public Hearings and Meetings.

(3) General Community Goals projects.[91]

(4) Citizen Committees and Boards and Councils.[92]

(5) Citizen Surveys.[93]

(6) Fishbowl Planning.[94]

(7) Delphi.[95]

(8) Citizen Workshops.[96]

While many of these devices have been highly successful in their own right, empirical evidence of the relationship between participation and policy outcomes is scarce, and in many policy areas is practically non-existent.[97] Improvement in the analytical technology of public involvement seems to be called for, as well as general strategies for accommodating interests in the policy development process. These might include:

(1) New criteria and devices for defining and identifying affected interests, based upon social, economic, and life-quality costs.[98]

(2) Increased sophistication in development and usage of survey research methodology for assessing a broader and more representative spectrum of interests.

(3) The use of simulation technology and computer based conflict modeling in order to provide an early array of alternatives and a graphic display of potential trade-offs.[99]

Along the lines of Michael Harmor's "Proactive" approach, there is a need to integrate analytical devices, direct public interaction, and elements of advocacy planning into a comprehensive response pattern. This pattern we call "strategic planning"; i.e., planning which attempts to identify, clarify and incorporate community values into vital decision processes. Marvin Manheim of M.I.T. exemplifies the germinal stages of just such a process in his "Community Values Approach" to highway location planning. His approach comprises the following elements:[100]

(1) Initial Survey . . . This stage is designed to gather baseline data regarding the socio-economic, political, and environmental characteristics of a given project or program development, as well as to generate a basic understanding of "interesting, needs, and desires of all potentially affected groups."

(2) Issue Analysis . . . This stage attempts to stimulate a broader understanding of the issues, objectives, and alternatives involved. "By presenting information about the alternatives and their impacts to various groups the location team helps them learn the issues and demonstrates the trade-offs that might be possible."

(3) Design and Negotiation . . .It this highly critical stage criterion of equity are applied and trade-offs developed between conflicting interests. "The location team hopes to achieve substantial agreement on a single equitable alternative. To effect this, it must structure a negotiation process that will prevent polarization of positions and promote rational bargaining among affected interests."

(4) Ratification . . . This final stage entails the achievement of relative concensus or the documentation of attempt at concensus building. If no agreement is reached "the team prepares its final report which contains a record of the negotiation effort and the team's most recent analysis of community preferences. Choosing an alternative is then up to the legally designated authority."

Whether or not these or any of the other procedures for constraining bureaucracy are effective only time and continued testing will tell. Yet, to the extent that they represent an attempt to coordinate many diverse pressures for reform and redirect them toward systematic assessments, they would seem to warrent that testing.

CONCLUSION

In this introductory piece we have attempted to provide a broad and rather sweeping exposure to the fundamental concepts, conflicts, confusions, and configurations of administrative policy, thereby setting the stage for our presentation of specific analytical procedures. Hopefully, we have demonstrated the critical interrelationships between particular types of procedures and the more general policy process. Moreover, it is our hope that we have adequately represented the constraints upon as well as the opportunities for systematic policy analysis within existing legal/institutional arrangements.

Reviewing the basic themes of this section, the following points were made:

(1) Policy analysis is a multi-facetted (formulation, implementation, evaluation) and multi-disciplinary pursuit.

(2) Policy analysis is a conglomerate of quantitative indices and qualitative judgements.

(3) Policy analysis is a set of systematized problem solving procedures, but it cannot solve every problem.

(4) The administrative policy process is the principal focus and the major user of policy analysis.

(5) Policy analysis, broadly defined, is a set of procedures for reforming bureaucratic decision-making and making it more responsible as well as responsive. While more readily applicable to performance demands its greatest potential lies in adapting processes to meet decision demands.

In the following sections and in the curriculum modules themselves, the themes of systematized problem solving and the integral relationship between performance improvement and decision improvement will be developed at greater length. If this section has increased the reader's awareness of the fact that these analytical processes do not exist in a vaccuum, but are buffetted by critical socio-political factors and constrained by organizational deficiencies, then it has fulfilled its basic objective.

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A SYSTEMIC PERSPECTIVE UPON POLICY ANALYSIS
Chapter II

Throughout the preceding discussion, the notion of systematic analysis was alluded to on several occasions. In this segment of the overview, the concept of "systems" will be developed more fully, particularly with reference to its application in the analysis and evaluation of public policy and programs.

In the past several decades, rapid scientific advances have been made in the development and application of new techniques of analysis and tools for complex problem-solving. New academic disciplines and professions--including the overlapping and complementary fields of communications engineering, systems engineering, operations research, systems analysis, and management science--have emerged and have found widespread incorporation in business, industry, and the military. Fundamental to all of these new fields is still another "discipline"--the field of General Systems Theory.

"General Systems" is much more than a discipline--it is an epistomology, an explanation of the basis of knowledge. In the words of Gerald Weinberg:[1] "As any poet knows, a system is a way of looking at the world." In many ways, it is analogous to the scientific method. As a method of inquiry, a systemic perspective seeks to bring about improvements in system performance.

Van Gigch[2] describes the process of systems improvement as follows:

1. The problem is defined and the system and component subsystems are identified.

2. The actual state, condition, or behavior of the systems are determined by observation.

3. The actual and expected condition of the systems are compared in order to determine the extent of deviation.

4. The reasons for this deviation are hypothesized within the confines of the component subsystems.

5. Conclusions are drawn from known facts by a process of deduction and the large problem is broken down into subproblems by a process of reduction.

The systems approach to problem solving has been both widely heralded and severely attacked. It has been criticized as Utopian on one hand and status-quo oriented on the other. C. West Churchman has explored these varying opinions in his famed "approaches to systems typology." Following are Churchman's four "systems types" in summary:[3]

1. The Advocates of Efficiency. This type claims that the proper use of systems analysis is identifying waste and inefficiency, and designing more efficient processes.

2. The Advocates of Science. This type claims that systems can become a science through building descriptive and prescriptive models and applying mathematics and economics.

3. The Advocates of Human Feelings. The humanists claim that human values are fundamental ingredients of systems, and that analysis should exalt human freedom and dignity.

4. The Anti-Planners. This group holds quite fervently to the belief that the advocates of rationality are either ignorant of the facts of life or evil power seekers. For this group the best use of systems is studying the existing institutions and their amazing resiliency.

In the following discussion of systemic analysis, an attempt will be made to forward a synthetic or mixed perspective upon the use of general systems thinking. In this way, perhaps, its potential, as well as its pretentions, will be more fully exhibited. A significant level of utility for systems theory is realized in the realm of management (both public and private). Van Gigch identifies the following managerial applications of a systems approach:[4]

1. Defining the boundaries of the system and its environments;

2. Establishing objectives;

3. Determining program structure and program-agent relationships; and

4. Describing the system's management.

To the extent that these management applications are also vital components of the policy development process, it may be possible to demonstrate the inexorable linkages between a systemic perspective and policy analysis.

THE SYSTEMS NOTION

A system is any entity, physical or conceptual (real or cognitive) which is composed of interrelated parts. This a widely held definition of a system; yet it is so broad as to include virtually any interdependent set of activities, events, or things. A computer is a system composed of a processor, data-receiving and data-emission elements, control elements, and a memory bank. An automobile engine is a system that uses several resource inputs (air, gasoling, oil, and electricity); has a structure composed of pistons, values, sparkplugs, a crankshaft, and so forth; and has certain measurable performance outputs. A community is a system composed of many structural units (such as primary groups, economic units, governments, religious and educational institutions, etc.) that interact according to certain rules of conduct (laws, norms, mores, contractual agreements, etc.) in order to achieve certain basic objectives or functions, i.e., to meet certain human needs and wants.

A system can be viewed as consisting of a conversion mechanism through which certain inputs are transposed or converted to outputs. This conversion mechanism operates through a series of definable processes or sets of procedures (the dynamic aspects of a system). Every system also has an indentifiable structural configuration (an arrangement of interrelated component parts) which describes the way in which the processes are organized, both in a formal, hierarchical sense and in an informal sense. Systems operate in a larger environment (or as subsystems of some larger system) and require certain inputs from this environment (resources and support). Initially, these environmental inputs are governed by the availability of certain resources, such as technology, money, personnel, information, and so forth. Resources are acted upon by the processes within the conversion mechanism (i.e., within the existing structural configuration) to produce a set of outputs. These outputs, in turn, are related to the functional aspects of the system, i.e., the system is "designed" to carry out certain functions. The environment responds to these outputs with feedback, which is translated into new inputs. These processes can be visualized in the following simplified diagram.[5]

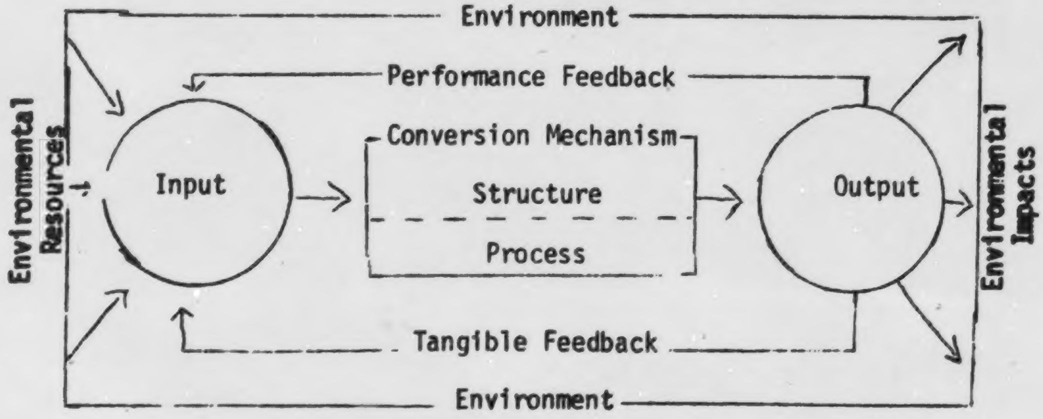

Figure 1. The Fundamentals of a System.

To this point, it hardly would appear that there is anything "new" about General Systems Theory or the more systematic approaches to problem-solving which are derived from this theoretical framework. Systems have been studied for many years in the natural sciences--physics, physical chemistry, and biology. In fact, "systems analysis" is the foundation of the "hard" sciences. However, an important albeit subtle distinction should be made between the concept of a systematic or orderly approach to analysis and a systemic or holistic approach. The systems notion in this holistic sense is a concept of performance, i.e., systems strive toward a perfecting of outputs in order to receive favorable feedback and maintain equilibrium with their environment.

General Systems Theory: Idea and Ideology

Harbingers of General Systems Theory can be identified as early as 1800. The famous German social-philosopher Friedrich Hegel suggested (with regards to social systems) that:[6]

1. The whole is more than the sum of the parts.

2. The parts have a teleological relationship to the whole (i.e., their nature is defined by the whole, which is their end).

3. All parts are interdependent in a dynamic relationship.

Concepts of this type were given substantial elaboration by a group of biologists known as the "Vitalists", who wrote around the turn of the 20th century. The Vitalists called for a new set of theoretical perspectives to unite the life sciences with their more mechanistic counterparts (e.g., physics). These early theorists inspired a continuing interest in interdisciplinary relationships.[7]

Robert Lynd and others, writing in the 1930's, contended that the growing specialization in the sciences was dysfunctional to the broader understanding of complex relationships. Lynd suggested that: "Never before have our data been so imposing . . . . And yet, never before has the lacumae been so devastatingly apparent."[8] Ludwig von Bertalanffy, viewed by many as the founder of the modern General Systems movement, elaborated upon this problem of scientific fragmentation as follows:

> Modern science is characterized by its ever-increasing specialization, necessitated by the enormous amount of data, the complexity of techniques and of theoretical structures within every field. This, however, has lead to a breakdown of science as an integrated realm: The physicist, the biologist, the psychologist and the social scientist are, so to speak, encapsulated in a private universe, and it is difficult to get word from one cocoon to the other.[9]

By the late 1940's and early 1950's, several conceptual advancements refocused systems thinking. In 1948, John von Neumann set forth the notion of artificial intelligence in his "Theory of Automata".[10] Meanwhile, C. E. Shannon and Norbert Wiener developed "General Information Theory" and the modern articulation of the concept of "Cybernetics" (regulation through feedback).[11] Ross Ashby further defined Cybernetics to encompass "self-regulative and self-directive" mechanisms.[12] These concepts extended the focus of systems theory to include man-build systems that manifest characteristics parallel to natural systems. Cybernetics and Information Theory spawned a diverse spectrum of social and organization theories during the following decade.

This diversity of views might be simplified by invoking a distinction between closed and open systems. In closed systems, patterns of internal interaction are isolated exclusive of the larger environment. Closed systems have been defined as follows: (1) Systems in which "there is no import or export of energies in any of its forms such as information", and (2) Systems "characterized by a lack of matter exchange with their environment."[13] Closed systems involve deterministic interactions; that is, they represent a one-to-one correspondence between the set of initial states and the set of final states. Open systems, on the other hand, are far less mechanistic and engage in vital interaction with their external environments. The open system concept also is significantly concerned with the behavioral aspects of subsystems and thus has been adopted as a model of the firm.[14]

Living organisms and their organizations maintain themselves (survive) in a continuous inflow and outflow with their environment, building up and breaking down components (subsystem). Such systems never exist in a state of equilibrium, in the chemical or thermodynamic sense, but are maintained in a so-called steady state. Thus, rather than seeking equilibrium, such systems strive to attain stability. They do so in a non-deterministic way by utilizing the teleological or goal-directed characteristics of open systems.[15]

In addition to these basic distinctions, Van Gigch establishes the following general categories of modern systems theories:[16]

1. Hard System Theory, which is a continuation of the influence of physics and mathematics . . . . They rely on the deductive paradigm and on exact rules and procedures of proof . . . . Hard Systems Theory usually provides good descriptive models of the universe but poor normative ones.

2. Soft Systems Theory. Systems defined as soft systems have structure, react to the environment by changing their short term functions, undergo slow long-term changes, but maintain identity and evolve.

3. Ethical Systems Theory. The systems designers bring about changes . . . . They must not only appreciate the effects of change on the recipients but also on their own systems . . . the ethics of systems is concerned with values of planners and designers.

Systems Approaches as Applied to the Political Process

Various political analysts, such as Easton, Spiro, Kaplan, Lineberry, Sharkansky, and others, have adopted, in part or as a whole, the basic concepts of the general systems model as a framework for their research on public policy. As Spiro asserts: ". . . any one who attempts to study politics scientifically must at least implicitly think of politics as though it were functioning as some sort of system. That is, he must assume that more or less regular relationships can be discerned among various aspects of politics and between phenomena he describes as political and certain other phenomena not so described."[17] Thus, various authors have sought to distinguish among "policy inputs" (e.g., demands, available resources, constituency support, etc.), the "policymaking process" (i.e., the conversion mechanism), "policy outputs" (e.g., the service levels which are affected by actions of government or the regulations and controls arising from these actions), and "policy impacts" (the effects which public services have on a population and the responses of the population to policy outputs). The "environment" also is discussed in terms of the social, economic, and political surroundings which both supply the impetus for policy and, in turn, experience its impact. These systems approaches to political analysis also give recognition to the critical tensions that exist between the ultra-stability of the political system and the need for dynamic change and adjustments in the institutions of contemporary society.[18] In seeking a framework for policy analysis and evaluation, it may be useful to clarify these concepts so as to provide a basis for the selection of independent and dependent variables that may be capable of depicting relationships among these critical components.

Perhaps the most comprehensive "system model" for political analysis is that formulated by David A. Easton in his book, A Framework for Political Analysis, and further developed in a subsequent work, A Systems Analysis of Political Life. Easton argues that: ". . . a political system can be designated as those institutions through which values are authoritatively allocated for a society; this is what distinguishes a political system from other systems that may be interpreted as lying in its environment."[19] The environment of the political system, Easton suggests, may be divided into two parts:

1. Intra-societal--consisting of those systems in the same society as the political system but excluded from the latter by the definition of the nature of political interactions and including such sets of behavior, attitudes, and ideas as might be called the economy, culture, social structure, or personalities; they are the functional segments of the society with respect to which the political system is itself a component.

2. Extra-societal--including all those systems that lie outside the given society; they are the functional components of a supra-society or supra-system of which any single society is part.

In a given society, the intra-societal environment constitutes a source of the many influences that create and shape the conditions under which the political system must operate. Together, the intra- and extra-societal systems form the total environment of the political system and give rise to the sources of influence that are of consequence for possible stress on the political system.

Sharkansky takes a similar, albeit more narrow, view of the environment, suggesting that: "Several features of the economic, social, and political environment of a jurisdiction can influence the kinds of policy decisions which officials make, and they can influence the translation of policy into outputs and impacts."[20] To illustrate this point, Sharkansky provides the following critical elements of an environment (which impinge upon the public service structure):

1. Characteristics of the service's clients--their number, the severity of their needs, their motivations, and their cultural and intellectual preparation can influence the level and cost of service.

2. Market costs and manpower availability--market costs for various skills and comodities can render the delivery of public services more or less expensive; similarly, the availability of manpower may influence the price of certain skills, or make it virtually impossible for policy-makers to obtain the types of skills required.

3. Economic conditions--the wherewithal to support public expenditures and factors determining the economic character of the clientele.

4. Certain features of politics--the political climate within a jurisdiction may be receptive or hostile to a particular public service, effected officials may either facilitate or retard efforts necessary to improve outputs, politics may affect the allocations of expenditures among personnel and/or facilities.

The concept of disturbance (a key concept in the field of General Systems Theory[21]) has been suggested by Easton as a means of identifying those influences from the total environment of a political system that may act upon it so that the system is different after the stimulus from what it was before. As Easton notes, not all disturbances are dysfunctional to the system (i.e., produce stress within the system). Some may be favorable with respect to the persistence of the system. Other disturbances may be entirely neutral with respect to possible dysfunctional aspects. However, many disturbances can be expected to lead in the direction of stress.

What happens when stress occurs within a system? Any response to this question must involve several subsidiary inquiries. First, if a political system is to persist (survive), it must successfully fulfill two functions: (a) it must be able to allocate values for a society (or give the appearance of such allocations for a sufficiently large number of people); and (b) it must also manage to induce most members of the society to accept these allocations as binding, at least most of the time. According to Easton, these are the two properties that help to distinguish political systems from other kinds of social systems. These two distinctive features are, in systems terms, the essential variables of the political system (i.e., functional prerequisities that give rise to the development of a particular system). Stress occurs when the possibility arises that external and internal disturbances will push the essential variables beyond what may be designated as their critical range. For example, widespread disorganization in the society and disaffection from the prevailing political system may arise from a severe economic crisis. Under such crisis circumstances, public authorities may be unable to make decisions that will be accepted as binding by a significant portion of the society. Thus, authoritative allocations of values are no longer possible, and the society may well collapse for lack of a political system that can fulfill these vital functions.

While this example offers an extreme case--one in which stress in the political system leads to its eventual demise--it must be recognized that frequently the stress-producing disturbances do not result in a complete disruption of the political system. Stress is present, but the system continues to persist in some form (characteristic of its ultrastability). As severe as a crisis may be, it still may be possible for public officials to make some kind of decisions and to attain sufficient support for these decisions so that some of the problems subject to political settlement can be resolved, at least temporarily. The residual affects of national or party loyality, to which individuals are indoctrinated through a socialization process, may be a significant contributing factor in such instances. The unwillingness of many Americans, for example, to accept the weight of the evidence regarding the transgressions of the Nixon administration even in its eleventh hour contributed significantly to the aversion of more catastrophic consequences of total system collapse.

It is seldom a question as to whether the essential variables are still operating. More frequently, when public officials are unable (or unwilling) to make critical decisions or to gain acceptance of decisions when they are made, the essential variables may only be displaced to some degree. They may be operating under stress but not in a sufficient degree to displace them beyond a determinable critical point. As long as the system does keep its essential variables operating within this critical range, some kind of system (although not necessarily the original system) can be said to persist.

This notion of system adaptability can be described in general systems terms as follows. For every disturbance that may impinge upon a system, an appropriate regulator or set of regulators must be developed (this is called the Law of Requisite Variety[22]). These regulators or defense mechanisms (amplifiers in the case of positive disturbances) constitute the responses of the system that are appropriate when disturbances occur--in essence, they define certain states of the system (i.e., modes of behavior) which the system can adopt in response to changing conditions in the environment which give rise to disturbances. If the Law of Requisite Variety is not met by any given system (i.e., if a disturbance impinges upon the system for which there is no appropriate regulator), stress will arise, and one of two things can happen: (a) the system will be destroyed, or (b) a new regulator will be developed, perhaps through trial and error, which is capable of countering the disturbance. If the latter phenomenon occurs, then new states are added to the initial system, and in effect, a new system emerges. The essential variables may remain in tact; however, the structure and processes that define the resulting system may differ significantly from the initial system, i.e., the system prior to the disturbance.

Real-world systems are usually modified only slightly when impacted by a disturbance, however, because most social institutions have developed the characteristics of ultrastability.[23] It is important to any society, of course, that its social institutions do have such solidarity, that they are ultrastable. Although this characteristic may impede social reforms, it is what gives the prevailing social system its strength. Society would be constantly on a threshold of chaos if its institutions could be toppled under the pressures from anarchists or maniacs, or even through the incompetence of individuals concerned with the operations of the subsystems.

Inputs, Demands, and Support

As noted previously, systems operate in a larger environment (or as subsystems of some larger system) and require certain inputs from other systems or subsystems within this environment. In this context, an input can be defined as any event external to a given system that alters, modifies, or affects the system in any possible way. The concept of input relationships between systems in the same environment implies that such systems are linked or coupled in some fashion.

The output of one system is not always received in the same form when it becomes input to the coupled system, however. Nor are all couplings operative at all times. Output-input relationships among systems are not always explicit. The output of one system, intended as input to another system, may not be accepted as input by the target system. By the same token, systems may take as inputs the outputs of other systems where there was no explicit intention for such a relationship to exist.

The definition of input cited above is so broad as to include virtually every event and condition in the system's environment. Therefore as a more manageable concept for purposes of political analysis, Easton has suggested that there are two major inputs to the political system arising from major environmental influences: demands and supports. Thus, Easton concludes that through these two major inputs:

> . . . a wide range of activities in the environment may be channeled, mirrored, and summarized and brought to bear upon political life . . . . In this sense they are key indicators of the way in which environmental influences and conditions modify and shape the operations of the political system . . . . (I)t is through fluctuations in the inputs of demands and support that we shall find the effects of the environmental systems transmitted to the political system.[24]

Inputs to the political system may be viewed as demands or commitments of resources (supports) by individuals, groups, or the community as a whole that are intended to influence the choices of participants in the system and thereby alter public policy. A demand has been defined by Easton as: ". . . an expressed opinion that an authoritative allocation with regard to a particular subject matter should or should not be made by those responsible for doing so."[25] In this definition, demand takes on a more neutral connotation, in that it is not necessarily associated with some set of value preferences on the part of the demandmaker. Demand, in fact, may be used to conceal true preferences, as when alternative programs are promoted for the purpose of generating support for some other, unexpressed course of action.[26]

In a very simple political system, such as a very small town, the inputs are generally informal and interpersonal.[27] The only political resources needed are friendship, access, and a little time. In larger political systems, the input process often is highly impersonal and institutional. Political parties, elections, interest groups, and even mass demonstrations dominate the process.

The Conversion Mechanism

General systems theorists frequently focus their analytical concerns on inputs and outputs and on the processes of feedback, leaving the conversion mechanism largely unexplored. For this reason, the translation of inputs into outputs often takes place within a "Black Box."

The conversion mechanism of a political system is composed of a set of social institutions that serve as functional subsystems of the larger system. These subsystems are functional because they are designed to carry out certain functions necessary to the continued operation (and survival) of the total society or important segments thereof. Like most functional subsystems, the components of the political system are characterized by rather complex sets of internal relationships (structure and process). As a consequence, what goes on within these functional subsystems often is unintelligible to an outsider; one does not gain admission to the activities within the functional subsystems without the appropriate credentials. This feature of functional subsystems previously led to the suggestion that they be labelled "esoteric," i.e., understood by or meant for only specially instructed or initiated individuals.

Labelling functional subsystems "esoteric" is not to suggest that they are closed systems, only that they are self-organizing and self-regulating. Among the inputs to a functional subsystem are the various clientele groups, i.e., members of the general public for whom the social institution was designed to serve and to whose demands the subsystems respond. For the most part, however, these clientele groups have relatively little effect on the structure or processes of the functional subsystem as they pass through them. Whatever else happens, the functional subsystem goes on; it is very powerfully organized to maintain its own internal stability--and therefore, its survival.

No system or subsystem, of course, can survive environmental disturbances so great as to be considered extirpating. Up to this final threshold, however, functional subsystems are "machines-for-survival"--and they do indeed survive. The operations within the functional subsystems that produce this survival behavior are social mechanisms, including the socialization to a particular belief structure and a complicated set of conventions, norms, values, rules and regulations (all of which contribute to the development of "systems expectations" on the part of the participants).

It may be appropriate to consider further this notion of expectations developed by those who participate in the system. An important step in seeking an acceptable decision is to make a reconnaissance of the expectations of the system. It may be anticipated that one of three conditions will exist: (1) the expectations of participants within the system are in accord with the proposed course of action, in which case an acceptable policy has been found; (2) the expectations are ambivalent to the proposed policy; or (3) the expectations are hostile to the proposed policy. In the latter two cases, some means must be devised to divert the hostile attitudes and/or to engender support for the proposed policy. If no acceptable means are found, internal demands (what Easton calls "withinputs") will be heightened, and a further assessment of the proposed policy will be required, with the possibility of new or different courses of action being selected.

Outputs and Feedbacks

The question: "What are the outputs of a policy-making process?" may seem so rudimentary as to negate its asking--obviously the outputs of policy-making are policies and the program commitments necessary to carry out these policies. However, as Sharkansky has observed:

> It seems likely that favorable combinations of expenditures, staff and facilities will add to the outputs of a service-providing agency. However, there is no assurance that this will occur. Powerful elements in the environment may have a telling influence on outputs. Or different elements of policy may work at cross-purposes to each other. It is therefore necessary to measure outputs independently of policy and test the assumed relationships between them.[28]

Both Easton and Sharkansky (among others) point to a need to look beyond the "tangible" outputs of the policy-making process to discern the implications of these outputs for the affected groups.

> . . . an output is the stone tossed into the pond and its first splash; the outcomes are the ever widening and vanishing pattern of concentric ripples. The actual decision and the implementing actions are the outputs; the consequences traceable to them, however long the discernible chain of causation, are the outcomes.[29]

It is, of course, the function of policy evaluation to discern the consequences or impacts of policy decisions. What is sought is an understanding of the conditions for the effective establishment and achievement of goals and objectives presumably formulated in the public interest, where the criteria of effectiveness may range from unspecified efficiency to a postulated welfare function.

It is the evaluation of impacts that provides the feedback phase of the systems model. In this sense, feedback involves: (a) the policy output as stimuli, (b) the response of these stimuli by the affected groups (acceptance or rejection, support or opposition, etc.), (c) the information feedback arising from the response and flowing back to the system, and (d) the output reaction--the modification of the initial output as a reaction to the response from the originators of demands and the sources of systems support.

Feedback may be either negative or positive. The classic example of the application of negative feedback is found in James Watt's governor for the steam engine, usually regarded as the first manmade and deliberately contrived feedback mechanism. As the speed of the steam engine increases, the governor activates a control valve that releases a portion of the steam, thus dampening the rate of increase. Positive feedback is built into the structure of the modern turbo-jet engine. The greater the output or thrust at the rear of the engine, the greater the speed, the greater the intake at the front, and again the greater the output. Input and output chase each other in a never-ending spiral of positive feedback, and the only method of preventing a runaway to destruction is to place limitations on the fuel supply.

Positive feedback is potentially dangerous, and therefore must always be monitored by some form of control. If positive feedback gets out of control, it leads inevitable to runaway, either to zero or to maximum. Runaway to zero is tantamount to "death"; runaway to maximum usually leads to the destruction of the system. Stanley-Jones has observed that a system that is "running away" under the influence of positive feedback has broken free from the monitoring or stabilizing influences of negative feedback, and cannot be restored to normal except by active intervention from outside the system; negative feedback cannot regain control unaided.[30]

The element of control, or self-regulation, in any system is accomplished by the mechanisms of feedback. The behavior of the system may be modified on the basis of information that deal with actual performance, measured against some established criteria basic to the system's well-being, or may be as subtle as a slight increase in some sophisticated production function.

One of the most important contributions of General Systems Theory is that it offers a single vocabulary and a unified set of concepts suitable for representing many diverse types of systems.

General Systems Theory reveals a number of interesting and suggestive parallels between various disciplines, and provides a common language by which discoveries in one field can be made more useful to other disciplines. It also offers a method for more scientific investigations of complex systems which often defy analysis except by the process of subdivision into simpler component parts. In relatively simply systems, the techniques of the systems model may provide no obvious advantages over those that have long been utilized. It is primarily when systems become more complex that the methods of General Systems Theory reveal their full potential.

THE GREAT SYSTEMS DEBATE

As the foregoing discussion has illustrated, systems concepts can be applied with some success to an analysis of political processes and policy determinants. Such applications, however, have both staunch supporters and vocal detractors. Almost like a charismatic personality, people either love systems approaches or hate them. It is thus incumbent upon this discussion to explore briefly the criticisms leveled against systems theory and, as appropriate, defend its utility with regard to policy analysis.

Isomorphism and Linearity

As applied to the full range of socio-political phenomenon, systems theory has been subject to general attacks of a philosophical nature. These rather esoteric criticisms might be summarized as the problem of isomorphism and the problem of linearity. Isomorphism is a critique of both "soft" and "hard" systems, while the problem of linearity is normally raised with regards to hard or mathematical applications of systems theory.

An isomorphism implies a striking similarity of form (biology) or a one-to-one correspondence (mathematics) among sets of systems characteristics. Therefore, the isomorphic problem, reduced to its basic point of criticism, is merely that no such relationship exists between mathematical systems models and social phenomena. While this criticism is broadly leveled, relatively few social theorists actually claim that there are such definitive relationships. For the most part, systems models are used to provide heuristic devices, rather than mechanical representations. While analysts may become carried away with their analogies, if systems models are recognized for what they are--intellectual abstractions that serve as leverage points for further investigations--then this problem of isomorphism takes on a much less significant character. As Chin suggests, any analytic model is a "constructed simplification of some part of reality that retains only those features regarded as essential for relating similar processes whenever and wherever they occur."[31]

Moreover, a key distinction can be made between levels of representation. For years, philosophers of science have debated the issue of whether the social and physical sciences are unique from one another merely by degree of sophistication, or whether they are different in kind (and therefore, require different types of analysis).

It is perfectly reasonable to hold that, indeed, a "kind distinction" applies at the level of phenomenology (behavior of the subject matter), but that merely a "degree distinction" prevails at the level of epistomology (basic scientific approach). In other words, while social systems are not mechanical, they can be studied as if they were, the reason for this being that man's pursuit of knowledge requires a certain level of systematic progression.

Linearity poses a larger dilemma. Linearity is the assumption that relationships can be plotted or "mapped" on a straight line basis, i.e., that they can be defined geometrically. The linearity assumption is most often used to project or forecast future states of the system based upon past experiences. As Berlinski suggests, social interaction is highly complex and "complexity begets nonlinearity."[32]

Nevertheless, a great many of the social implications of mathematical reasoning do not depend upon linear assumptions. Stability in the system need not imply linearity. Furthermore, a range of alternative techniques have been developed for policy forecasting to account for divergent future behavior.[33] The pitfalls of linear presuppositions continue to plague the more sophisticated mathematical models; however, given the general nature of most systems thinking as applied to social policy, it is a relatively minor issue, the critics of these applications notwithstanding.

More Pragmatic Criticisms

Beyond these philosophical and methodological debates, a more pragmatic set of criticisms has arisen to challenge systemic analysis. These issues emerge from the actual instrumentation of systems in particular policy settings. They often are the results of hasty and/or misapplication rather than faulty reasoning. Charles Hitch, Chancellor of the University of California and former RAND analyst, once suggested, for example, that he had never undertaken a systems assignment in which the objectives of the system could be easily ascertained.[34]

Ida Hoos has catalogued a group of such problems, beginning with the inadequacy of information gathering processes. Hoos explains this problem as follows:

> Dear to the hearts of technically oriented analysts is the information gathering and processing of the state. In fact, so (satisfying) is this occupation with data that many systems designs, purported to deal with pressing social problems, never progress beyond that point. Displaying the ingestive propensities of a snake, the information system swallows up all the resources allocated to a given project and diverts attention from its larger purpose.[35]

Hoos and others have proceeded to fault systems analysts on the values inherent in modeling and interpretations of optimal solutions. Initially, in the building of the model, the perceptions of the analyst affect the choice of parameters. However, the procedural aspects of systems thinking are actually devoid of value content. By the same token, while it is valid to contend that optimizing procedures lock the analyst into an optimizing strategy based upon original objectives, these are the issues of problem definition, not of systemic processing. In short, systemic analysis is a process, not a product. Any analysis is only as good as the information and goal-defining that went into it. If a person receives a defective piece of merchandise, can he assume, therefore, that the free enterprise system is a defunct concept?

Advocates of systems analysis, such as E. S. Quade and Kenneth Kraemer,[36] readily admit to misapplication and methodological overkill. These are largely interface problems, however, involving a failure to match an appropriate method of analysis with a particular type of policy problem (e.g., applying operation research methods, such as queuing techniques, to problems of goal formulation).

Issues of Incrementalism

In addition to mixing apples and oranges in the choice of analytical methods, systems analysts often fall prey to a larger interface problem--that of matching their approaches with the prevailing politics of a given policy issue. This problem is exemplified by the rise and subsequent demise of PPBS (Planning, Programming, Budgeting Systems) at the Federal level. As most students of the political process are well aware, politics thrives on disjointed, incremental decisions which afford multiple points of access and facilitate multiple opportunities for individual and/or interest group aggrandizement. Thus, the political process is openly hostile to the rigour and control of a comprehensive policy-making mechanism. Legislators are simply unwilling to clarify objectives. Vague mandates are much more conducive to the fragmented spending of the constituent service pattern; and, of course, constituent service is vital to re-election. A systematic budgetary process was totally alien to this mentality.[37] Moreover, PPBS was initially tested in the inhospitable policy realm of national defense. James Schlesinger suggests that PPBS was clearly misjudged by Congress, who viewed it as a usurpation of its prerogatives. In actuality, it was designed to improve, not surplant, political decisions.

Fortunately, the utility of systems thinking and the survival of systemic policy analysis does not depend upon the success of one particular budgetary strategy. Like the scientific method, it is not cast out because experiments fail. Nevertheless, there are important lessons to be derived from these failures. Essentially, systemic analysis must learn to tread very lightly as it ventures forth in an unsystematic (trans-rational) world. There are great incentives for maintaining the status quo inherent within existing institutional arrangements.

In addition, mathematical models will continue to have only selective applicability to social phenomena. Yet, to the extent that mankind assumes that the social world is indeed intelligible and that he can improve his place within it, he must continue to address the world in a systematic fashion.

FROM SYSTEMS ANALYSIS TO POLICY ANALYSIS

Contrary to popular mythology, systems analysis is not some form of administrative "crystal ball"--it does not provide patent solutions. As Catanese and Steiss suggest:

> . . . analytical results hinge on some ambiguous factors. A good systems analysis will not suppress this ambiguity. Rather, it will present complete enumeration of the results for various alternative assumptions about ambiguous factors. A bad analysis may suppress the ambiguity--deliberately or inadvertently--and may present what purports to be the right answer.[39]

Given the inherent ambiguities of social phenomena interpreted through evaluative choices, systems analysis as applied to social policy is primarily concerned with narrowing the field of choices. It may also be used as an information generating device to expand the range of alternatives and to isolate relevant subsystems. It is this type of application which provides the central theme of the present discussion.

Policy-Making as a System

Prior to the advent of systems thinking in the policy realm, studies provided little insight into policy making as a process. Traditional policy studies focused upon patterns of influence at a given point in time, and presented a rather static picture of the policy process.

As Roscoe Martin, et. al, contend:

> . . . decisions do not eventuate from single, individual choices, but from a flow of choices . . . . A series of acts are involved in a decision to take or not to take a particular public action. It will prove useful to examine the process . . . .[40]

It might be suggested, therefore, that the policy-making system can best be viewed in terms of a multi-stage process by which inputs are converted to outputs. Simon and March, for example, suggest a three-stage process, beginning with: (1) a disaggregation of the problem to permit solution of the parts; (2) a search stage (which may be perceptual, cognative, or physical); and (3) a screening stage in which the items identified in the search stage are examined to see if they qualify as possible solutions (or possible components of such solutions) to the problem at hand.[41] Simon and March acknowledge, however, that the elementary components of the policy-making process are characterized by a good deal of randomness and that there is considerable arbitrariness in the sequence in which these steps are initiated. Running through the policy-making process, however, are two elements that give it structure and permit it to yield a relatively well organized product: (1) the broad procedural programs recognizable in most problem-solving situations; and (2) the substantive programs, i.e., the structuring of the process that comes about as a reflection of the structure of the problem.

As a rule, policy processes become more orderly and identifiable when they reach the stage in which alternative solutions are formulated and considered. Yet, the earlier stages, in which the problem is first defined and the demands for policy decisions are categorized, require equally systematic approaches. As Northrup so aptly has pointed out:

> "One may have the most rigorous of methods during the later stages of investigations but if a false or superficial beginning has been made, rigor later on will never retrieve the situation."[42]

While a particular system under study often is set apart from its broader environment, it must be recognized that many aspects of this environment have important impacts upon the system. These enter the system as inputs and, as noted previously, take the form of demands and supports. Before demands can gain entry, however, they must be "sensed" as demands, i.e., someone within the system must recognize the conditions giving rise to such demands as being "out-of-phase" with some set of acceptable conditions.

Individuals approach any situation with a conceptual structure or frame of reference into which an attempt is made to fit objective observations. This conceptual framework is a dynamic thing, continuously built upon through education and experience. Thus a certain background and training may provide individuals with a well-constructed system of ideas which makes them more sensitive to problems that others might pass over unobserved. That is to say, an individual's conceptual frame of reference governs, in large measure, the way in which he will approach an uncertain situation. Further, this frame of reference will contribute to the identification of a situation as being "out-of-phase" with the presently acceptable system.

Thus the role of the public manager or administrator as an "initiator" in the policy-making process, may be identified more clearly. These individuals must continually appraise various aspects of the accepted system and identify any elements in the broader environment that may seem to be a potential disturbance to this system. This role might be likened to that of a regulator which acts as a warning device against conditions that threaten to drive the system out of some desirable set of conditions.

Beyond this initial stage, the role of the manager may vary considerably depending on the trajectory that the policy-making system assumes. For this reason, this stage of the process frequently is overlooked or deemed to be outside the actual process. Such a view, however, rationalizes the policy-making process unduly. A clerk who recognizes some discrepancy in sales procedures which has resulted in reduced profits and brings this situation to the attention of his superior, may not be "in" on the final policy decision to make major modifications in sales operations. Nevertheless, this change in the system came about through the clerk's initiative.

Systemic Policy Development

This discussion gives rise to the need to make a basic distinction between programmed decisions and adaptive and innovative decisions. Once a situation has been identified as uncertain (or potentially uncertain), there are four possible responses that may be made. Each response involves a further degree of commitment to the policy-making process.

The first possible response is to disregard the uncertain situation; that is, to decide to do nothing about it. Such a response is likely when the demand (input) is below some threshold of tolerance. If, for any number of reasons (such as time, cost, or effort) this response is invoked, then the process is cut short and abandoned.

The second response is to identify further the uncertain situation as one which can be handled through programmed decision mechanisms. This would suggest that the system contains a "memory bank" in which these programmed decision mechanisms are stored and against which uncertain situations are "tested" to determine if an appropriate programmed decision is available. Here again, the process is cut short by the application of a programmed response.

If either of the two remaining possible responses is utilized, the process moves to the next state -- the stage of classification and definition. Thus, inputs are "screened" to determine the actual intakes into the system. This screening process filters out those demands for which no further action is to be taken at present and those which can be handled through programmed mechanisms.

Although uncertainty is essential to an initiation of the policy-making process, more is required before a problematic situation arises, i.e., one for which policy-makers are likely to search for alternative responses. The first question to be asked concerning an uncertain situation is: "Is this a symptom of a fundamental problem or merely a stray event?" While the generic problem situation can often be dealt with through the application of programmed responses, the truly exceptional event can only be handled as it is encountered.[43]

Strictly speaking, a distinction should be made among four, rather than two different types of problem sets.

1. There is the truly generic event, of which the individual occurrence is only a symptom. Most of the "problems" that confront a political system fall into this category. As a rule, such generic situations require adaptive decisions, i.e., decisions which begin with programmed responses but which require considerable reconstruction of program details. Adaptive decisions seek to alleviate built-up pressures by removing the more immediate sources of demand. Frequently, programmed decision mechanisms are applied to the symptoms of a generic problem. Until the generic problem is identified, however, significant amounts of time and energy may be spent in the piecemeal application of programmed decisions (treating the symptoms) without ever getting control of the generic situation.

2. While some situations may represent unique events for a given system, they are actually generic problems. For example, a city is faced with the problem of choosing a location for its

municipal airport. As far as the present community decision-makers are concerned, this is a nonrecurrent or unique situation. But it is, of course, a generic situation which has occurred in other cities in the past. Arriving at a decision as to the most suitable location requires some general rules, and for these, the policy-makers can look to the experiences of others, i.e., to pursue an adaptive decision process.

3. In truly unique situations, the event itself may be unique or the circumstances in which the event occurred may be unique. To illustrate, the huge power failure of November, 1965, which plunged northeastern North America into darkness, was a truly exceptional event according to first explanations. On the other hand, the collision of two airplanes may be considered a unique situation, not because airplanes do not run the danger of collision, but because of the unique conditions or circumstances under which the event occurred. Truly unique events, however, are rare; whenever one occurs, the question must be asked: "Is this really the first manifestation of a new generic problem?"

4. The early manifestation of a new genus of problems represents the fourth category of events with which the decision process must deal. Both the northeastern power failure and the isolated collision of two aircraft were only the first occurrences of what, under conditions of modern technology, are likely to become fairly frequent occurrences unless generic solutions can be found.

General rules, policies, or principles can usually be developed or adopted to deal with generic situations. Once the right policy has been found, all manifestations of the same generic situation can be handled fairly pragmatically through the adaptation of the rules or principles to the concrete circumstances of the situation, that is, through adaptive decision-making. The unique problem and the first manifestation of a generic problem frequently require greater innovation to arrive at a successful solution. Figure 2 illustrates the relations between these four categories and the two fundamental dimensions of availability of rules and principles for dealing with such problem situations and the frequency of encounter of these situations.

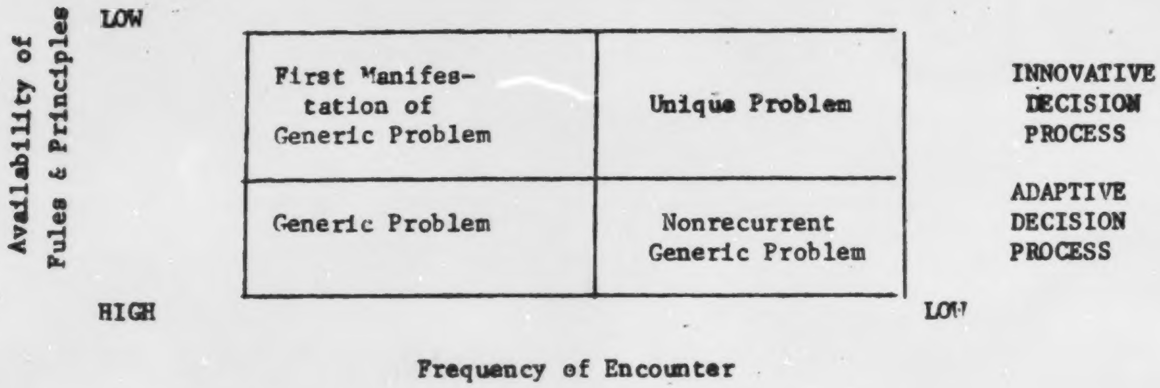
Availability of Rules & Principles
LOW
HIGH
First Manifestation of Generic Problem
Unique Problem
Generic Problem
Nonrecurrent Generic Problem
INNOVATIVE DECISION PROCESS
ADAPTIVE DECISION PROCESS
LOW
Frequency of Encounter

Figure 2. Basic Categories of Problems Demanding Decisions

By far the most common mistake in problem-solving situations is to treat a generic problem as if it was a series of unique events. The other extreme of treating every problem incrementally through the application of programmed decision mechanisms (i.e., treating a unique event as if it were just another example of the old problem to which the old rule should be applied) can have equally negative repercussions.

The role of the experienced professional manager in this stage of the process should be evident. To avoid incomplete solutions to only partially understood problems, the technical expertise of those closest to the situation should be utilized to classify the problem. Once a problem has been classified, it is easier to define. A further danger in this step is not the wrong definition, but a plausible, yet incomplete definition. The technical expertise of the professional manager is required to safeguard against an incomplete definition by checking it against all the observable facts and discarding any definition the moment it fails to encompass any of them.

The outcome of the analysis of a problematic situation should be a clear definition of the problem. If the problem cannot be stated specifically, preferably in one interrogative sentence which includes one or more goals, then the analysis of the problematic situation has not been adequate or of sufficient depth. Emotional bias, habitual or traditional behavior, or the frequent tendency of humans begins to seek the path of least resistance which may result in a superficial analysis, followed by a statement of an "apparent" instead of the "real" problem. An excellent solution to an apparent problem, of course, will not work in practice, because it is the solution to a problem that does not exist in fact. Short-cutting this phase of policy analysis actually may result in more time being spent later to get at the real problem when it becomes painfully evident that further analysis is required.

The next major step in the policy-making process involves the establishment of clear specifications as to what the policy must accomplish. In so doing, six basic questions must be answered:

1. What objectives must be met?

2. What are the minimum goals to be attained?

3. What measure(s) of efficiency can be used relative to each of the objectives?

4. What standard(s) can be applied for evaluation of the overall effectiveness of possible courses of action?

5. What are the existing or potential constraints to an effective solution?

6. What definition of "most effective" is to be applied in judging the possible solutions to any given problem in light of the identified goals and constraints.

These questions aid in the establishment of boundary conditions, i.e., that set of factors which define the "field" within which a feasible solution can and should be found. Where techniques of operations research can be applied, it may be possible to identify boundary conditions clearly and to give them numerical values. In most public policy situations, however, the identification of boundary conditions may be a most difficult undertaking, seldom adaptable to mathematical processes.

A policy decision that does not meet the boundary conditions is worse than one that wrongly defines the problem. It is all but impossible to salvage policy decisions that start with the right premises but stop short of the right conclusions. Furthermore, clear thinking about the boundary conditions is needed to recognize when a course of action brought about by a given policy must be abandoned. A major cause of policy failure lies in an inability to recognize a subsequent shift in conditions--in the problem specifications--which makes the prior "right" decision suddenly inappropriate.

Often policy decisions are made in which the specifications to be satisfied essentially are incompatible. In other words, to achieve Goal A through a prescribed course of action precludes the achievement of Goal B, or at best makes this achievement highly unlikely. This situation represents a classic case in which boundary conditions were not fully and clearly identified. Moreover, a policy decision often is made which involves a "gamble" or so-called "calculated risk." This is the type of decision that might work if nothing whatever goes wrong, and often emerges from something much less rational than a gamble--namely, a hope against hope that two or more clearly incompatible specifications can be fulfilled simultaneously.

As a rule, the articulation of public goals and objectives seldom is sufficiently specific to be of real value in establishing boundary conditions for any particular policy issue. Therefore, what is required is some mechanism whereby these overall goals can be translated into more specific program goals and through which identifiable boundary conditions can be tested against the more general (and remote) goals and objectives. The best "device" continues to be experience, coupled with a careful delineation of the problem and the associated objectives. The public manager's role should be to continue to monitor public sentiments and identifiable "felt needs" and to translate these into such terms as to make possible a comparison among an area of alternative strategies.

In Search of the "Best" Policy

Once the problem and the boundary conditions have been specified, with what is believed to be a sufficiency of relevant facts available, it is possible to pass on to the next phase of the process--the formulation of policy alternatives in search of a "best" policy. It should be an invariable rule to develop several alternatives for every situation. Otherwise there is the danger of falling into the trap of a false "either-or" proposition. There is a common confusion in human thinking between a true contradiction which embraces all possibilities, and a contrast which lists only two out of a number of possibilities. This danger is further heightened by a tendency to focus on the extremes in any problem situation.

Alternative approaches relevant to a given policy-demanding situation differ in grade according to the level of reflection reached. At first they are relatively vague; but as the alternative becomes more appropriate, observations likewise become more acute. Perception and conception continue to work together until the former locates and describes the problem, while the latter represents a possible method of solution.

The next step is to develop an understanding of the possible consequences, by-products, and side-effects associated with each of the suggested policy alternatives. This examination consists of an identification of the implications of particular courses of action in relation to other aspects of the system. The relationship so formulated constitutes a proposition: If such and such a relation is accepted, then we are committed to such and such courses of action because of their membership in the same system. Through a series of such intermediate examinations, an understanding of the problem finally is reached which may be more relevant to the policy demanding situation than the original conception.

Only after a number of alternatives have been formulated is it possible to determine the "best" policy. If an adequate job has been done to this point, it will be found that either there are several alternatives to choose from, or there are half a dozen or so which fall short of perfection, but differ among themselves as to the area of shortcoming. It is a rare situation n which there is one and only one appropriate course of action. In fact, whenever policy analysis leads to this comforting conclusion, one may reasonably suspect the policy decision of being little more than a plausible argument for a preconceived idea.

There are two basic modes of operation for finding the "best" policy from among several alternatives depending upon the general class of decision sought--adaptive or innovative. Since adaptive decisions merely require that the selected course of action meet the minimal expectations sanctioned by the system, and do not require the substitution of new expectations, the "best" alternative can be selected on the basis of relatively simple criteria. The selected policy alternative should be one that provides "satisfactory" solutions to the problem, while creating a minimum disturbance of established expectations. No single policy alternative may satisfy these conditions, and therefore, it may be necessary to combine elements from several alternatives to achieve these objectives. The innovative policy commitments require more rigorous analysis and testing, since they will result ultimately in modifications of expectations. In seeking the "best" policy to a situation requiring innovation, there are five criteria that may provide helpful guidelines, dealing with such issues as:

1. Treatment of uncertainty;
2. Risks and expected gains;
3. Economy of effort;
4. Timing of alternatives; and
5. Limitations of resources.

Most policy situations requiring an innovative response involve major conditions of uncertainty. Several techniques, applicable under varying circumstances, have been developed to provide explicit treatment of uncertainty in the analysis of alternatives. These techniques include:

1. Sensitivity analysis--designed to measure (often rather crudely) the possible effects on alternative under analysis resulting from variations in uncertain elements by assigning various levels of "expected values" to these elements.

2. Contingency analysis--designed to examine the effects on alternatives under consideration when a relevant change is postulated in the criteria for evaluating the alternatives; it is a form of "with and without" analysis.

3. A fortiori analysis--coming from the Latin, meaning "with stronger reason", this method deliberately "stacking the deck" in favor of one alternative to determine how it might stand up in comparison to other alternatives.

While these three techniques for dealing with uncertainty may be useful in a direct analytical sense, they also may contribute indirectly to the resolution of policy demanding situations. Through sensitivity and contingency analysis it may be possible to gain a better understanding of the really critical uncertainties of a given problem area. With this knowledge, a newly designed policy alternative might be formulated that would provide a reasonably good hedge against a range of the more significant uncertainties.

Converting Analysis Into Policy

Effective policy analysis must build from what is "right" or "best" rather than what is acceptable or possible precisely because in converting analysis to actual policy commitments compromises are inevitable. Policy-makers gain little if the process starts out with the question: "What is acceptable?" In seeking answers to this question, important things usually are overlooked and any changes of coming up with an effective solution--let alone the right answer--may be lost.

Having identified the "best" policy alternative, the first step in seeking an acceptable decision is to make a reconnaissance of the expectations of the system. Unlike the adaptive decision process, innovative policies nearly always require that expectations be altered and modified. Therefore, a careful appraisal must be made of expectations (both internal and external to the system) that must be accomodated, in order to devise the means for diverting potentially hostile attitudes and engendering support for the proposed solution.

Converting policy analysis into acceptable policy decisions is often the most time-consuming aspect of the systemic process. A policy will not become effective unless the action commitments have been built into it from the start. In fact, no decision has been made unless carrying it out in specific steps has become someone's work assignment and responsibility. Until this is accomplished, the policy is only a good intention.

The flaw in so many policy statements is that they contain no action commitments--they fail to designate specific areas of responsibility for their effective implementation. Converting policy into action requires that several distinct questions be answered: (1) Who has to know of the policy decision? (2) What action has to be taken? (3) Who is to take it? and (4) What does the action have to be so that the people who have to do it can do it? The first and the last of these questions are too often overlooked--with dire consequences.

The action must be appropriate to the capacities of the people who have to carry it out. The action commitment becomes doubly important when people have to change their behavior, habits, or attitudes if a policy is to become effective. Care must be taken not only to see that the responsibility for the action is clearly assigned, but also that the people assigned are capable of carrying it out. The measurements, the standards for accomplishment, and the incentives associated with the proposed action must be changed simultaneously with the introduction of the policy.

To complete this multi-stage model, provision must be made throughout the process for feedback. Feedback occurs, intentionally or unintentionally, at many stages in the process. Much of this feedback is internal to the process, resulting in a re-cycling of a particular stage in order to acheive further refinements and modifications. The feedback which has an impact on the entire system, however, generally occurs at two points: (1) after the policy decision has been made and action programs have been initiated; and (2) whenever internal demands are created within the system. In both cases, new demands (inputs) may be generated, causing the total process to re-cycle.

Information monitoring and reporting are particularly important after a policy decision has been reached in order to provide continuous testing of expectations against actual events. Even the best policy decision has a high probability of being wrong; even the most effective one eventually becomes obsolete. Failure to provide for adequate feedback is one of the primary reasons for persisting in a course of action long after it has ceased to be appropriate or rational. While the advent of the computer has made it possible to compile and analyse great quantities of "feedback" data in a relatively short period of time, it must be recognized that computers can handle only abstractions. Abstractions can be relied upon only if they are constantly checked against concrete results.

A basic aspect of the policy-making process is the development of a predictive capability within the systems to identify changing conditions which might necessitate modifications in the selected courses of action. Controls should be developed for a given solution by: (1) defining what constitutes a significant change for each variable and relationship which appears as a component in the policy decision; (2) establishing procedures for detecting the occurrence of such significant changes (providing modifications in the screening devices); and (3) specifying the tolerable range within which the policy can be modified if such changes occur and beyond which new solutions must be sought. In applying these controls, the information gained through "feedback" serves as a central component.

CONCLUSIONS

Taken in the aggregate, these elements of the systemic perspective provide a highly unified approach to problem-solving and the formulation of public policy. This does not imply, of course, that every problem will find a suitable solution, nor does it suggest that every policy will prove politically efficacious. Systems thinking is a way of approaching problems, not absolving them. Yet, as more and more of the responsibilities of policy development fall to the professional manager, such a unified approach may prove to be highly effective.

As has been noted above, systems thinking is very old; it is only in recent years, however, that the ideology has been transformed into methodology. Systems analysis has been thrust, as it were, into the roaring vortex of social change and has been asked to lend order to the growing chaos. In short, current efforts to develop more systemic forms of analysis are responses to a clear set of societal needs. Van Gigch defines these needs as the need to: (a) generalize, (b) simplify, (c) integrate, (d) optimize, (e) evaluate, (f) plan, and (g) control.

A systemic perspective is both a response to and a redefinition of the social reality which poses these types of needs. It is this aspect of redefinition which has opened systems thinking up to serious attack. Social theorists continue to contend that social phenomena will not fit the systemic mold. Hoos summarizes this position as follows:

> (Social systems) defy definition as objective, philosophy, and scope . . . . Solution of social problems is never achieved . . . . Despite the semblance of precision, there are no right and wrong, true or false solutions. Consequently, it is presumptuous to label as wrong anything than can be done now and right that which looks good on paper.[44]

While this type of pessimism is a healthy intellectual contribution and a safeguard against overgeneralization, as policy practitioners, we can ill-afford to be intimidated into inactivity by the complexity of social problems. While the tools of analysis are crude, the choice is one of deferring judgement to await methodological closure, or seeking policy improvement, irrespective of the complexity. To the extent that system analysis can reduce the complexity, it signals greater involvement in the activity to which we are already professionally committed.

FOOTNOTES

1. Gerald M. Weinberg, An Introduction to General Systems Thinking (New York: John Wiley and Sons, 1975), p. 52.

2. John P. Van Gigch, Applied General Systems Theory (New York: Harper and Row, 1974), p. 4.

3. C. West Churchman, The Systems Approach (New York: Delacorte Press, 1968), p. 13-14.

4. Van Gigch, op.cit., p. 15.

5. In a survey of the literature on general systems theory, O. R. Young found numerous definitions of systems attributes, with little agreement among these definitions. Although he found 19 concepts and polarities which are used by ten or more authors, there are also characteristics given systems by only a few authors. "A Survey of General Systems Theory," General Systems, edited by Ludwig von Bertalanffy and Anatol Rapoport (Ann Arbor: Society for General Systems Research, 1964), p. 63.

6. For an overview of Hegel's contribution, see: Herbert Marcuse, Reason and Revolution: Hegel and the Rise of Social Theory (Boston, Beacon Press, 1960), particularly pp. 62-72.

7. See: E. A. Singer, "Mechanism, Vitalism, Naturalism," Philosophy of Science, XIII (1946), pp. 81-99.

8. Robert S. Lynd, Knowledge For What? (Princeton, N.J.: Princeton University Press, 1967), p. 16.

9. Ludwig von Bertalanffy, "General Systems Theory," Main Currents in Modern Thoughts, Vol. 71 (1955), p. 1.

10. John von Neumann, "The General and Logical Theory of Automata" in Cerebral Mechanisms of Behavior, edited by Lloyd A. Jeffress (New York: John Wiley and Sons, 1951).

11. C. E. Shannon and W. Weaver, The Mathematical Theory of Communication (Urbana, Ill.: University of Illinois Press, 1949); Norbert Wiener, Cybernetics (New York: John Wiley and Sons, 1948).

12. W. Ross Ashby, Introduction to Cybernetics (New York: Wiley-Interscience, 1963).

13. N. Botnavic, "The Wholeness of Living Systems and Some Biological Problems," in General Systems, edited by Ludwig von Bertalanffy and A. Rapoport (Ann Arbor: Society for General Systems Research, 1966), p. 93.

14. See: Daniel Katz and Robert L. Kahn, *The Social Psychology of Organizations* (New York: John Wiley and Sons, 1966).

15. For a further discussion of these concepts, see: Alan Walter Steiss, *Models for the Analysis and Planning of Urban Systems* (Lexington, Mass.: D. C. Heath-Lexington Books, 1974), chapter 7.

16. John van Gigch, *Applied General Systems Theory*, *op. cit*., pp. 51-52.

17. Herbert J. Spiro, "An Evaluation of Systems Theory," in *Contemporary Political Analysis*, edited by James C. Charlesworth (New York: The Free Press, 1967), p. 164.

18. An open system in a changing environment must itself change if it is to survive and these changes involve the system's structure and/or behavior. *Ultrastability* is defined as the capacity to persist through such changes.

19. David A. Easton, *A Systems Analysis of Political Life* (New York: John Wiley and Sons, 1965), p. 21.

20. Ira Sharkansky, *Policy Analysis in Political Sciences* (Chicago: Markham Publishing Co., 1970.

21. In systems terms, a system is said to have stability when it is maintained in one or more desired states within a set of states M (the region of stability). A disturbance D may be defined as any event or occurrence that threatens to drive the system outside of the set M. All systems, to maintain stability, must have the capacity to form responses to disturbances that impinge upon the system from the broader environment. These responses, when coupled with the system, block the disturbance so that the system may remain within M. This response mechanism is called a *regulator* (R). In general, the essential role of a good regulator is to maintain stability, i.e., to keep the system within a desired stable set of states. In systems terms, the regulator must be capable of reducing the level of entropy or disorganization within the system that is brought about by a disturbance.

22. Ashby, *op. cit.*, p. 207. For a further discussion of this concept as applied to urban problems, see: Steiss, *op. cit.*, chapters 2 and 10.

23. The concept of "stonewalling" which surfaced during the Nixon administration illustrates this point. The introduction of this term into our political vocabulary has produced measurable changes in the society. The character of the national political system would have been altered to an even greater extent had Nixon been successful in warding off the "disturbance" of Watergate and its aftermath with this defense mechanism.

24. Easton, op. cit., p. 27.

25. Ibid., p. 38.

26. The actions taken by citizens and public officials in many suburban residential communities to adopt zoning and subdivision regulations, architectural control ordinances, and the like often illustrate this point. The espoused motivation for these controls may be stated as "the maintenance of good planning principles" and "the promotion of sound principles of orderly community development," when in fact the real motivations are to maintain individual property values at relatively high levels, to keep down school-age populations by making it difficult for young families to move into the community, and to keep out other "undesirables."

27. Arthur Vidich and Joseph Bensman, Small Town in Mass Society (Princeton: Princeton University Press, 1958).

28. Sharkansky, op. cit., p. 65.

29. Easton, op. cit., p. 352.

30. D. Stanley-Jones, "The Role of Positive Feedback," in Progress of Cybernetics (London: Gordon and Breach, 1970), p. 251.

31. Robert Chin, "The Utility of Systems Models and Developmental Models for Practitioners," in The Planning of Change, edited by Warren G. Bennis, et. al. (New York: Holt, Rinehart and Winston, 1964), pp. 201-202.

32. David Berlinski, On Systems Analysis: An Essay Concerning the Limitations of Some Mathematical Methods in the Social, Political and Biological Sciences (Cambridge, Mass.: M.I.T. Press, 1976).

33. See: John W. Dickey, "Long-Range Forecasting Techniques," one of the modules in this curriculum package.

34. Charles Hitch, On the Choice of Objectives in Systems Studies (Santa Monica, Calif.: RAND Corporation, 1960), p. 11.

35. Ida Hoos, "Systems Technique in Managing Society," Public Administration Review (March/April, 1973); 162-63; also note: Ida Hoos, Systems Analysis in Public Policy: A Critique (Berkeley, Calif.: University of California Press, 1972).

36. E. S. Quade, Analysis for Public Decisions (New York: American Elsevier, 1975), esp. pp. 13-31; Kenneth Kraemer, Policy Analysis in Local Government (Washington, D.C.: International City Management Association, 1973), pp. 22-29.

37. See: Aaron Wildavsky, "Rescuing Policy Analysis from PPBS," in Public Expenditures and Public Policy, edited by Robert Haveman and Julius Margolis (Chicago: Markham, 1970), 461-484.

38. James R. Schlesinger, "Systems Analysis and the Political Process," in The Administrative Process and Democratic Theory, edited by Louis Gawthrop (New York: Houghton Mifflin, 1970).

39. Anthony J. Catanese and Alan Walter Steiss, Systemic Planning: Theory and Application (Lexington, Mass.: D. C. Heath and Company, 1970), p. 11.

40. Roscoe C. Martin, Frank Munger, et. al., Decisions in Syracuse: A Metropolitan Action Study (Bloomington, Ind.: Indiana University Press, 1961), p. 318.

41. Herbert A. Simon and James G. March, Organizations (New York: John Wiley and Sons, 1958), pp. 179-189.

42. Wilmer S. C. Northrup, The Logic of the Sciences and the Humanities (New York: Macmillian, 1947), p. 1.

43. Peter F. Drucker, "The Effective Decision," Harvard Business Review, Vol. 45 (January-February 1967), p. 95.

44. Ida Hoos, "Systems Analysis as a Technique for Social Problem Solving--A Realistic Overview," Socio-Economic Planning, IV, No. 1 (March, 1970), p. 29.

THE CURRICULUM MODULES
Chapter III

This chapter will focus on the curriculum modules that comprise the policy/program analysis and evaluation components of the NTDS Urban Management Curriculum Development Project. The express purpose of this discussion is threefold:

(1) To demonstrate how these analytical mechanisms interact one with another, and fit within the general rubric of policy/program analysis and evaluation.

(2) To examine briefly the objectives, design, and capabilities of each curriculum module.

(3) To suggest the application and limitations that comprise the parameters of each module.

To lend a sense of cohesion to this presentation, the modules have been divided along their most dominant generic lines. This division is inherently stipulative. Moreover, as the discussion will point out, these processes are overlapping both in time sequence and in functional application. Nevertheless, the following categorization does serve an explanatory purpose.

Functional Objective	Curriculum Module
Discovering Goals and Objectives and Generating Alternatives	Strategic Planning Issue Paper Techniques Long Range Forecasting Management By Objectives
Financial Planning/Administration and Analysis	Cost Benefit/Effectiveness Analysis Performance/Program Budgeting Capital Facilities Planning and Debt Administration
Policy/Program Implementation and Evaluation	Implementation Procedures Productivity Measurement Performance Auditing

While these module topics do not constitute a complete set of policy analysis tools, they do provide a basic set; a starter set if you will. These techniques cannot address every policy problem or issue. No set of techniques, no matter how sophisticated, can achieve complete coverage of all problem situations encountered in the formulation and implementation of public policies and programs. These techniques, however, can order thinking in reference to many common and yet complex policy problems. Furthermore, in relative comparison to existing administrative practices, these techniques, taken as a package, can provide considerable advancement in the state of the art of public management.

DISCOVERING GOALS AND OBJECTIVES AND GENERATING ALTERNATIVES

The processes by which public policy is formulated and implemented involve both qualitative and quantitative judgments. Management science techniques, such as operations research and systems analysis, have found application in problem situations where the primary objective is to increase efficiency--where it is clear what "more efficient" means. Analysis often can be reduced to the application of a basic "model", such as linear or dynamic programming or queuing theory, and by the specification of parameters and constraints, the analytical model can be made to fit a wide variety of operations. An "optimal solution" is then obtained by means of a systematic computational routine.

There are many other public policy situations, however, where such analytical techniques can only assist in the solution of sub-problems or minor components of larger complex problems. Such situations normally involve more than the efficient application of resources among some clearly defined set of alternatives. These problems are not "solvable" in the same sense as efficiency problems in which some "pay-off" function can be maximized in a clear expression of what is to be accomplished. Under these more complex situations, the difficulty often lies in determining what ought to be done (i.e., planning), as well as in how to do it (i.e., management), where it is not totally clear what "more efficient" really means, and where many of the factors in the problem situation may elude quantification. Final policy and program recommendations must thus remain, in large part, a matter of judgment and faith.

Decision Demands and Systematic Analysis

Decision demands (prudence, flexibility, responsiveness)--while rarely found in a pure form, separate and distinct from performance demands (efficiency, responsibility, integrity)-- do constitute a significantly unique analytical enterprise. For the most part, the analytical process is one of deciding what to do rather than how to do it. This process which Kraemer associates with developmental or planning problems (note once again Figure 1) is concerned with "setting objectives" and "inventing alternatives".[1] Kraemer proceeds to identify this realm of the policy formulation process with such phrases as "largely intuitive" and "largely qualitative". The qualitative character of these judgments does not imply that they need be unsystematic, purely subjective, and/or capricious. Inevitably such judgments will be more susceptible to social and political pressures (as they should be). But these elements of transrationality do not imply the reign of irrationality, or the defeat of analysis. As Kraemer has so cogently pointed out, "the greatest potential benefit of policy analysis is in just those areas where the problems are most complex, the costs and risks the highest, the uncertainties greatest, and the results most likely to be seen only over an extended period of time."[2]

The devices to be discussed in this section are expressly designed to cope with this challenge of reducing uncertainties in those realms of highest uncertainty and to lend greater objectivity to highly subjective judgments. In this regard, these mechanisms attempt to replace technocratic or political guesswork and arm-chair forecasting with more rigorous approximations of societal demands. In addition, these devices are designed to develop task orientations and establish action commitments within those organizations which must meet these demands.

While the following set of procedures are only a sample of the types of activities applicable to developmental problems, they are representative of a broad range of strategies and techniques.

Strategic Planning

Strategic planning, as might be expected from the title, is an outgrowth of military decision-making, decision-making which must meet every conceivable eventuality. Along these lines, strategic planning has also been widely used in the private sector as a means of meeting fluctuating conditions of the market-place. Stated simply, strategic planning is a process for reducing the level of uncertainty under which a given system operates.

The primary objective of strategic planning is to broaden the base upon which to make public decisions having long-range implications. Strategic planning attempts to identify long-range needs stemming from growth and development (or lack of growth), to explore the ramifications and implications of public programs and policies designed to meet those needs, and to formulate development plans and strategies that permit a maximization of positive aspects of growth while minimizing the negative aspects.

Strategic planning is the process of identifying public goals and objectives, determining needed changes in these objectives, and deciding on the resources to be used to attain these objectives. Through the formulation of a strategic plan, policies--factual premises representing what can be done--are tested against goals--value premises representing what should be done. The outcome of this interface is an incorporation of ideal and practical elements in the public policy formulation process.

Strategic planning is a generic concept implying a vast array of more particular techniques which might include: survey research, attitudinal studies, public awareness/involvement programs, long-range forecasting, scenario generation and simulations, diagnosis of trends, formulation of effectiveness measures, and so forth. Strategic planning is both a process for discovering societal goals and for translating these goals into action commitments. It has three essential aims:

(1) the identification and clarification of long-term needs in the context of a short-range planning process;

(2) the design of plans and policies which reduce the impact of unintended social consequences (spill-over effects); and

(3) the interface of decision demands with performance demands, and the creation of integrated approaches needed to maximize social satisfaction while minimizing costs, waste, inefficiencies, and time delays.

An overall characteristic of strategic planning is that of comprehensiveness; an attempt is made to integrate and coordinate the operations of all the identifiable variables and alternatives in the process. This comprehensiveness seeks to eliminate piece-meal planning and to allow prediction and correction of perceived problems, both in the present and the future. Furthermore, this comprehensiveness includes elements of theoretical and practical planning with the objective or transforming good intentions into working policies.

The underlying basis for strategic planning--its need and justification as an activity appropriate to the public management process--has been detailed in the following observations:

> Planning. . . is often anticipatory in its orientation, dealing with matters that are not imminent problems. While nearly all planning involves the formulation of corrective measures to alleviate mistakes of the past, the essence of planning is preventive rather than remedial. . . . To handle such problems, it is necessary to deal with possible situations which only can be forecast. The operational situations envisaged do not as yet exist, and further, they have only a proability of actually existing at some point in the future. In a very real sense, it may be said that the

> systems to be analyzed do not exist but must be "invented." By the same token, the operational laws governing the behavior of these systems must be brought into being by proper manipulation of the operational environment. This means that both the "invented" systems and the operational laws must be conceptualized and analyzed.[3]

In this context, planning must go beyond analysis; it must include the process of synthesis.

> This synthesis must include not only the means already existing which might be gainfully preserved for use in future operations, but also many new means which must be constructed in order to achieve a competitive advantage that does not now exist. These new means must be identified if the synthesis is to be truly creative.[4]

The probabilistic nature of future systems necessitates the development and study of long-range alternatives. It is important to seek an optimization of each alternative. Yet, it also is necessary to consider how to optimize the future by comparing the values and objectives associated with an interrelated set of optimized alternatives.

There are several steps involved in the process of strategic planning. One process, presented by Bernard Taylor,[5] outlines six major stages:

(1) setting objectives;

(2) appraising the organization's resources and capabilities;

(3) assessing trends in the commercial, technological, and social environment;

(4) assessing alternative paths open to the organization and defining clear strategies for future development and growth;

(5) producing detailed operational plans, programs, and budgets; and

(6) evaluating overall performance against clear criteria in light of goals, strategies, and plans established.

A more extensive typology of "administrative planning" is provided by John Parker.[6] His conception adds to the stages defined above a stage of description and prediction in which both the organization's future and the community's future are projected; and evaluative stage in which organizational goals are matched against community values; a stage in which priorities are determined among defined objectives; and a plan revision stage in which performance feedback is used to modify and improve policy directions adopted in the initial strategic plan.

Catanese and Steiss, in their "hybrid" of systems analysis and comprehensive planning, which they call "systemic planning", identify the following steps as appropriate to this process:[7]

(1) Definition and clarification of current and future problems and interrelationships among these problems.

(2) Prediction of future conditions arising from identifiable problems

(3) Identification of parameters, boundary conditions, or constraints which determine the range of possible solutions to the totality of problems

(4) Determination of goals and objectives at varying levels
  (a) Maximal and minimal levels
  (b) Optimal levels
  (c) Normative or Utopian levels

(5) Definition and analysis of subsystems
  (a) Breakdown of the system into its component parts (subsystems), so that subsystem analysis can proceed in parallel
  (b) Identification of particular problems and needs associated with each subsystem

(6) Formulation of alternatives

(7) Evaluation of qualitative and quantitative cost-effectiveness of each alternative

(8) Simulation of alternatives in the projected environment of the urban system in order to test overall performance, as well as to determine possible by products and spill-over effects

(9) Determination of implementation sequence for each feasible alternative based on the critical dimensions of certain defined subsystem requirements and on the definiteness of subsystem specifications

(10) Recommendation of (a) minimal; (b) optimal; and (d) normative alternatives

(11) Feedback from political and public interests to determine necessary modifications in suggested alternatives

(12) Selection of alternative course of action and initiation of action programs to bring about the desired conditions

(13) Development of predictive capacity within the system to identify changing conditions which might necessitate modifications in the selected course of action

(14) Establishment of a continuous monitoring process to evaluate output feedback

A more concise and perhaps less ambitious picture of strategic planning might focus on the following ingredients: (1) basic research and analysis (data collection and inventory studies, including a determination of a "planning horizon" and the levels of population to be served, and diagnosis of trends and needs and the consequent formulation of effectiveness measures; (2) forecasts of alternative futures based on specific trend and policy variables; (3) statements of goals and objectives as definitions of the desired state of the system; (4) formulation, analysis, and evaluation of alternative courses of action; and (5) the formulation of policies that govern the acquisition, use, and disposition of public resources.[8]

Drawing upon these perspectives, as well as others, a model of strategic planning has been constructed as the first in the series of curriculum modules. This model has five basic phases which come into play once a general consensus to plan has been reached or when an organization or governmental entity is faced with a critical service demand. The five overall phases are:

I. Basic Research
II. Alternative Futures
III. Goals Articulation
IV. Strategic Responses
V. Policy Refinements

I. Basic Research. This initial stage involves the development of baseline data. Much of the data required for strategic planning already exists in one form or another and thus need only be collected and categorized. In others cases, hard empirical and/or soft attitudinal data must be generated from scratch. In general, the basic research stage is designed to provide a thorough going analysis of a particular problem situation. In this regard the following functions are involved:

(1) A diagnosis of the roots of basic problems and the various causal relationships.

(2) The identification of key variables in the process of ameliorating the problem.

(3) A projection of the interrelationship between sets of community problems such as: unemployment and crime.

II. Alternative Futures. This second stage not only involves a forecast of future community needs and resources; it attempts to predict the general organizational political setting in which the problem will be addressed. This forecasting process entails five critical elements:

(1) Regional socio-economic and political forces

(2) Community development

(3) Community needs

(4) Organizational development

(5) Financial potentials.

III. Goals Articulation. This stage defined the desired state of the system. While implicit in the other stages, goals and objectives are made explicit in this stage. Goals are cast in a mold which will facilitate strategic adjustments in the state of the system. The vital point here is that community goals are rarely completed achieved, rather goals are synthesized with possible solutions to create realizable objectives. This process is normally threefold:

(1) An appraisal of community goals in context.

(2) A projection of the desired state of the system

(3) The formulation of hypothetical objectives.

IV. Strategic Responses. In this stage hypothetical objectives are concretized and the range of strategic responses appropriate to the projected futures chosen. Responses are again adapted to achieve productive synergy with the existing policies and programs of the community or organization. In general, this stage strives to answer five basic questions:

(1) What is to be accomplished (objectives)?

(2) Where is it to be accomplished (focus)?

(3) How is it to be accomplished (means or methodology)?

(4) Where do these objectives fit into the general community priorities (goals alignment)?

(5) What are the standards of accomplishment (performance measurement)?

V. Policy Refinement. This stage represents the fact that for strategic planning to be truly strategic, it must be continually refined. In essence, it includes a monitoring process which insures that the policy is continually ready to meet future conditions. These refinements would facilitate the translation of strategic policies into program policies and/or development policies. The following specific events are associated with this enrichment process.

(1) Trigger events and action sequencing which link responses to changes in future conditions.

(2) Monitoring and policy adjustment.

(3) Pilot studies.

(4) Sub-Area specific policies, which insure adaptability to diverse segments of the public.

III. Design and Selection of Alternatives. In the final phase of the strategic planning process, system inputs are considered, weighted, and evaluated to produce an output--a policy statement and/or recommended program of action. Policies and programs should cover the entire range of actions required by goal sets and should be structured according to community needs and organizational objectives. Policies must address such basic questions as: (1) what is to be accomplished (objectives); (2) how it is to be accomplished (means); (3) where it is to be accomplished (locus); (4) given limited resources, what is to be accomplished first (priorities); and (5) what are appropriate measures of accomplishment (standards for evaluation and control).

This culminative phase involves the selection of the best policy statement based upon feasibility, program consequences, financial considerations and the needs and requirements of the community. This is the actual "decision" stage of strategic planning, and all previous stages have been the build-up to make the decisions easier and more logical (as well as less risky and uncertain).

Strategic planning also includes, of course, continuous feedback and reassessment activities. In a somewhat parallel context, various authors have referred to this subprocess as "adaptive planning" or "contingency planning." Friedmann makes an important distinction between developmental and adaptive planning:

> The former (developmental planning) is concerned with achieving a high rate of cumulative-investment for a given area by activating unused resource capabilities; the latter (adaptive planning) is interested chiefly in the qualitative adaptations to the changing interplay of economic forces within the area. To put it another way, adaptive planning generally takes place in response to externally induced development.[9]

Adaptive planning is premised on the contemporary characteristics of urban development and the high degree of interregional dependency which governs much of current decision-making. As a consequence, the planner must be in a position to formulate responses to exogenous forces, taking advantage of newly developed resource capabilities or other opportunities which originate outside the community and relieving pressures emerging from these forces and opportunities. The contingency approach is aimed at creating conditions whereby the effects of unforeseen crises can be deflected or absorbed at minimum cost or inconvenience. The field of engineering has followed this strategy for years, by introducing large safety factors into the designs to reduce to a tolerable level the likelihood of materials failure. The engineer may also offer a cost-reliability trade-off, i.e., the relative costs of designing a facility to meet different contingency levels.

Contingency and adaptive planning, taken in the abstract, share a basic problem--they seek to avoid the worst, while providing relatively little guidance as to how the best can be achieved. As a subprocess in strategic planning, this shortcoming is at least partially circumvented since one of the major objectives of the strategic planning process is to gain agreement as to what the "best" is or should be.

The difference between strategic planning and the more traditional approaches to planning might be summarized as follows:

(1) Strategic planning strives to reduce rather than extoll intuitive judgments and to place such judgments on a more objective and professional basis.

(2) Strategic planning seeks to establish guidance mechanisms based on an aggregation of social goals and objectives, rather than relying on linear extrapolations of past and current trends in the physical environment.

(3) Strategic planning provides a basis for adjustment between long-range goals and short-range needs, rather than maintaining the invariability of forecasted futures.

In essence, strategic planning establishes a frame of reference with which to test policies and programs, allowing for continual experimentation and refinement, rather than blind commitment to what is often self-fulfilling growth policy. Strategic planning offers the basis for a thesis as well as a synthesis.

Issue Paper Techniques--Identifying the Boundaries of Policy Problems

As has been suggested, the decision process quite often is laced with intuitive/professional judgments. This element of intuition does not imply that such judgments are ill-founded (i.e., not based in fact). Nevertheless, such judgments often place a cloak of mystery over the intervening logic between the factual characteristics of a problem and the formulation of alternative courses of action to resolve that problem. The techniques embodied by the issue paper are vital not only to the clarification of policy problems, but also in the removal of this cloak. Thus a issue paper may provide a substantial aid to the many educated laymen who take part in the policy formulation process, as well as the professional analyst.

As originally conceived, the purpose of an issue paper was to explore a problem in sufficient depth to provide decision-makers with a fairly complete idea of its dimensions and the possible scope of its solution. On the basis of this initial exploration, decision-makers could then determine further courses of action and commitments, including the development of more definitive studies leading to specific policy and program recommendations. In practice, however, the issue paper has evolved as a formal, systematic assessment of all that is currently known about a particular problem or issue based on data that are readily available -- it does not involve additional in-depth analyses or extensive data gathering efforts. Thus, an issue paper serves as a first phase study, the objective of which is to establish boundary conditions in order to lay a foundation for more extensive policy and program analyses as may be indicated by this problem perspectus.

An issue paper attempts to identify the real problem or problem set, to isolate the fundamental objectives involved, to suggest appropriate measures of effectiveness and alternative courses of action, and to identify the population subgroups currently affected or likely to be impacted by the problems. Government agencies and private sector organizations concerned with various aspects of the issue are listed, and resources currently available and those that can readily be applied to the problem are identified. An issue paper stops short, however, of the actual investigation and evaluation of the impacts of the various alternatives--for otherwise it would be the analysis itself. Originally developed in conjunction with the techniques of Planning-Programming-Budgeting Systems, the issue paper has received widespread application in a broad range of public problem-solving situations.

An issue paper seeks specific answers to such critical questions as:

(1) What is the magnitude of the problem, how widespread is it currently, and how important is it likely to be in the foreseeable future?

(2) What public goals and objectives are associated with the identified problems, and what is its impact on these objectives?

(3) What measures of effectiveness and efficiency can be developed to monitor progress toward the resolution of the problem and the attainment of the associated goals and objectives?

(4) What specific activities relevant to the problem are currently being undertaken by government, and what alternative programs or activities should be considered for meeting the problem?

To be reasonably certain that no aspect of the problem is overlooked, it is appropriate to work through a standard format in fairly systematic fashion even though all of the required data and information may not be available or may not be in the desired form in terms of accuracy or dependability. In addition to assisting in the further articulation of the problem and the identification of related problems, by-products, and spill-over effects, such a standard format can help to provide an appropriate management perspective to problem-solving.

The major elements of a standard issue paper are outlined and discussed below. Since the original format for the issue paper was designed primarily for use with PPBS systems, in application to other problem situations it may be necessary to omit certain sections. In some cases, it also may be desirable to add categories such as an accounting of the political constraints associated with a particular policy issue or problem.

(1) The background and sources of the problem. This section should offer a clear and concise description of the problem, issue, or situation for which further analysis is proposed; identify the origins of the problem; specify the particular manifest symptoms; and, to the extent possible, suggest some of the root causes. Since it is important to distinguish between symptoms and causes in order to identify the real problem, basic cause-effect relationships should be clarified to the extent that they are known.

(2) Why the "problem" is a problem. This section identifies why the situation warrants the assignment of analytical resources at this time and the possible consequences if the problems are permitted to continue unabated. Such a statement serves to justify the expenditure of public funds for analysis.

(3) The groups or institutions toward which corrective action are directed. Often in the formulation of a program or decision to eliminate a problem the exact "who" or "what" that is to serve as the target is ambiguous. Thus, it is necessary to spell out the specific population, if it is other than the general public, and to provide general characteristics, such as age group, race, income class, special needs, and geographical location. For example, if a health program were being considered, the target group might be those with a particular illness or those who were in a high-risk category. It is also important to distinguish between those persons who are actually in the target group and the impacted population to be included if certain alternatives are undertaken. If, for example, the problems under analysis stems from current welfare eligibility standards, the actual target group would include all those presently eligible to claim benefits plus (or minus) any categories of individuals that would be affected by contemplated changes in the rules.

(4) The affected publics. The question of who gets the benefits and who pays the costs is central to the resolution of most public policy problems and issues. Therefore, it is important that these groups are clearly delineated (to the extent possible, it would be desirable to have quantitative estimates and projections of the numbers in the various beneficiary and target groups) so as to alert decision-makers of these existing and potential "clientele groups".

(5) Current programs and policies related to the problem. The issue paper should provide a list of specific activities currently underway that affect (or potentially could affect) the problem. Such programs should be identified, and to the extent possible without inordinate effort, related

program costs and their impacts on the target and beneficiary groups should be estimated. Indications of the number currently being served by these programs and projections based upon whatever plans are known are helpful. It is important to make the list as complete as possible--federal, state, city, and county, as well as private sector programs should be identified. Any new efforts to achieve the same or essentially similar objectives should obviously be integrated and coordinated with those of all other agencies having effect on the problem or issue.

(6) Clarification of goals and objectives. It is important to identify the goals and objectives associated with a particular issue or problem in a clear, careful, and precise manner. Otherwise, it is very likely that further analysis will come up short for lack of adequate direction. Imprecise or incomplete statements of objectives may result in misconceived measures of effectiveness, incorrect and ineffectual specifications of alternatives, and misdirected investments of resources that have little hope of alleviating the problem. It is important to look beyond the immediate problem situation to call attention to longer range goals and any possible spillovers to other public programs. In this connection, the data base developed through the procedures of strategic planning may be applicable to the identification of community-wide and societal goals.

(7) Designation of effectiveness measures. Effectiveness measures involve a scoring technique for determining the state of a given system (organization, community, etc.) at a given point in time. They are indicators that measure direct and indirect impacts of specific resources in the pursuit of certain goals and objectives. Under this approach, goals are defined by: (a) level of current performance, (b) the impact of current resources on performance, and (c) a comparison with desired levels of performance.

(8) Identification of a framework of analysis. This section explores the methodological approaches to be applied if the issue paper leads to a full-scale analysis. The analytical framework defines the basic assumptions and the types of techniques and methods to be utilized. At this stage, of course, the methodology can only be discussed in very tentative terms. It is important, however, to establish this framework and to test its efficacy against what is known about the problem in order to determine if extensive new data will be required to operationalize the selected approach.

(9) Generation of alternatives. At this stage of the issue paper, an attempt should be made to generate the broadest possible range of alternatives, even though some of them may seem, a priori, impractical, too costly, technically infeasible, or highly unorthodox, Later, when the full-scale analysis is underway, many of these alternatives may be rejected. However, at the outset it is important to take a wide-open, free-wheeling, unconstrained look at all of the possibilities. While it is probably adequate to focus primarily on the "pure" or distinct alternatives, where it seems obvious, the possibility of mixed solutions or combinations and permutations arising from the basic alternatives should also be discussed.

(10) Setting forth recommendations. Examples of the types of recommendations to be set forth in an issue paper include: (1) to undertake a full-scale study, (2) to continue the analysis, but on a low priority basis, or (3) to terminate any further analysis since the problem is below some threshold of concern. Occasionally, sufficient information may come to light during the development of the issue paper to provide the basis for decisive conclusions regarding one of the alternatives, thus warranting an immediate action recommendation. In such cases, the preliminary design to initiate the study has, in fact, become the study.

Actual issue papers may involve additional or compound stages and indices as necessary. In some instances, it will be deemed appropriate for the policy analyst to comment upon the political conditions and the arena through which the policy should seek passage. In other situations, the analyst may wish to specify the organizational setting most conducive to successful implementation.

A final item of concern is the appendix. Since a primary purpose of an issue paper is to produce a document that is concise and clear enough to be read in its entirety by decision-makers who have to make up their minds whether to continue with a full-scale analysis, it may be appropriate to include much of the technical materials in an appendix. Such an appendix (or appendices) might include extensive authoritative references, footnotes, back-up tables, charts, raw data, computer print-outs, extensive calculations, special exhibits, and any other items that might be helpful to other analysts in verifying the informational content of the issue paper.

In sum, then, an issue paper is a formalized and elaborated form of "brain storming", which serves as the hub of the professional discussion of policy problems. It channels that discussion in the direction of more systematic thinking, as well as providing greater visibility for ultimate policy decisions.[10]

Long Range Forecasting and the Projection of Alternative Futures

In both of the policy development mechanisms discussed thus far, the process of forecasting of projecting served as quite a prominant feature. Processes for predicting the future, more often than not, are viewed by the layman (or layperson) as tantamount to soothsaying. This view is somewhat justified in reference to past experiences in which futures were predicted on little more than hunches. An even more distressing situation is where forecasting was used as an instrument in the hands of community growth agents (e.g., developers, businessmen, and real estate owners). Alan Wyner suggests that with water and other similar commodities requiring municipal bond elections citizens were often panicked by exponential growth forecasts into acquiring large overdrafts. With an overabundant water serving as a catalyst for growth, the predictions became self-fulfilling.[11]

Despite these abuses of forecasting, our society is more dependent on their use than ever before. As Alvin Toffler points out in his epic Future Shock, the vast majority of technological innovation has taken place in our lifetimes. This decade is fast becoming known as the "Age of Uncertainty." For a whole variety of economic, environmental, and political reasons, it is becoming more difficult to feel confident in a smooth transition into the future. Planning ahead for 10 to 15 years, which is often required for extensive (and capital intensive) public works projects, seems to be an increasingly hazardous task, and many local officials complain that they can not even predict revenues and expenditures a month ahead of time, much less 10 to 15 years.

Part of this problem has to do with the techniques available for making such forecasts. In the past it had been a relatively easy and accurate task simply to extrapolate from historical trends. If revenues went up 5% a year for the past 10 years, then they surely would go up another 5% next year and for every year thereafter. But the energy crisis disturbed this complacency by bringing out a set of rather unique factors that had not had a significant impact on past events. No one gave much though, for example, to the price of gasoline as a factor in highway revenues until it took a quantum jump in 1974. Then local officials quickly realized that many of their desired highway and transit projects could not be funded, at least until the distant future, because of state and federal revenue shortfalls.

The types of techniques to be discussed here under the heading of long-range forecasting, or what has often been labeled "technological forecasting", are expressly designed to achieve reduction of uncertainty with regard to unique or perhaps even cataclysmic events. While making forecasts, even on a very short term basis, is a difficult occupation at best, and while these techniques certainly cannot be viewed as dispelling all or even a large part of the mystery enshrouding the future, they do have their benefits. The primary advantage is that the experience and intuition of a group of people with a broad range of expertise can be employed to identify the unique events that otherwise might not be considered. Another advantage lies in the use of mathematics to help trace these experienced forecasts to their logical (and sometimes illogical) ends. In these ways, technological forecasting derives the best benefits from two worlds -- the intuition of experienced practitioners and the rigor of mathematical deduction. The result hopefully is a much more informed view of the future (and its uncertainties) than might otherwise be available.

The name "Technological Forecasting" is something of a misnomer in the context of this module. The title comes from a history of applications, to a great extent in the military, in which researchers were trying to track the evolution of various technologies and use their findings to make forecasts of future developments. Yet the techniques associated with Technological Forecasting have a much wider range of applicability than

than technology. They currently are being employed in a very broad spectrum of economic, social, environmental, and political contexts. They also are being utilized to supplement an array of statistical estimation tools which traditionally have been used by, say, economists, to help make predictions.[12]

Some of the techniques described here are as old as mankind, but most were developed within the last 5 to 15 years and have only recently been applied to urban problems. Thus while there has been a considerable number of successful military and private sector trials, there have been relatively few public/civil applications. Hence most of the techniques must be viewed as somewhat untested. On the other hand, urban trials are proceeding rapidly, and it will not be long before the more useful tools become included in the standard packages of available techniques. The purpose of this module is to highlight these methods so that the practitioner will be aware of many of their advantages and disadvantages when faced with the opportunity to use one or more of them.

The most common tools included under the heading of Long-Range Forecasting number about 11. These are:

(1) Regression: a statistical technique for finding straight line relationships between a pair (or more) of variables.

(2) S-Curves: relationships of the form of an S-curve over time, that is, when growth is slow initially, then rapid, then tapering off quickly as limit is reached.

(3) "Genius" Forecasting: that done by an individual without interaction with any other people.

(4) Committee Forecasting: that done by a typically instructured group of people.

(5) Analogy: prediction in which characteristics or events similar to that in a known entity are assumed to hold for the unknown entity.

(6) Delphi: a structured committee in which feedback is anonymous and statistical.

(7) Gaming: competitive actions between groups to generate simulated future outcomes.

(8) Morphological Analysis: a search for unique forms or combinations of characteristics or events which may evolve.

(9) Relevance Trees: a hierarchy of goals and functions indicating the most productive (relevant) parts for future developments.

(10) Probe: a "critical path" arrangement of future events showing which ones are needed for a particular event to occur.

(11) Cross Impact: a process for taking into account simultaneously the strength and direction of interaction between expected events.

The range of problem areas to which these techniques can be applied is wide. In fact, for some techniques it is not even necessary to have "hard" data as input. The techniques can be employed for both short and long term horizons for helping to make forecasts of factors such as population, employment, revenues, expenditures, racial tensions, public attitudes toward particular issues, and the like. Of course, the techniques also can be utilized for forecasting technological developments in such areas as solid waste disposal, transportation equipment, and energy generation. The usefulness of such forecasts naturally will vary with the item being considered, but generally will be of higher quality for technical rather than social factors. Nevertheless, as social indicators (quality of life and social well-being) are refined along with unique social forecasting techniques perhaps commensurate or at least approximate quality will eventually be achieved. At present even minor reductions in the level of uncertainty augur for a continued development of forecasting.

Management By Objectives: The Translation of Societal Goals Into Organizational Objectives

Having arrived at an approximation of societal goals and objectives and achieving socio-political consensus regarding their pursuit are not guarantees that complex public organizations will be able to carry out these plans and programs. As suggested in the initial portion of this overview, organizations develop implicit, if not explicit, goals and objectives of their own. The primary organization goal is survival, and surviving may not be directly dependent upon fulfilling the broad mandate or specific policy missions given that organization. Also it has been noted that individuals within organizations have a panoply of personal goals which may be quite divergent from the goals of the organization. Several management techniques have been developed to bring about action commitments within complex organizations and to make them harmonious with those demands arising in the broader decision environment. One general title given to these tools and techniques is Management by Objectives (MBO).

MBO has been recognized as a valuable tool in the private sector for over fifty years. It has only been in recent years, marked by the rapid growth of the public sector, that MBO has been explored by public organizations. While not strictly an alternative to Planning-Programming-Budgeting Systems (PPBS), it has been in the wake of PPBS that MBO has gained attention and application at the federal level. Interest at the state and local levels of government has quickly followed.

MBO is a relatively simplistic approach which attempts to provide a framework for identifying, integrating, monitoring, and evaluating individual and organization objectives. It requires that these objectives be operationalized in empirical if not quantitative terms. Such verification is significant in the public sector where objectives are frequently and deliberately obscured to achieve political consensus, or where objectives often must undergo significant redefinition when made operational.

As suggested, the most essential feature of MBO is the integration of individual (personnel) goals with broader organizational missions. In the MBO cycle, personnel become aware of not only what they do but also why they do it: what the organization is trying to accomplish, what are their individual performance targets, and what has been their progress toward these targets. Again, it is theorized that such increased awareness will improve motivation and deepen commitment towards efficient work performance.

A vital element of MBO is the encouragement of innovative decisions within the parameters of organizational goals. In essence, administrative energy, symbolized by risk-taking, is rechanneled into functional paths. Peter Drucker explains this aspect of MBO as follows:

> The ultimate result of management by objectives is decision, both with respect to the goals and performance standards of the organization and to the structure and behavior of the organization. Unless MBO leads to decision, it has no results at all: it has been a waste of time and effort. The test of MBO is not knowledge, but effective action. This means, above all, risk-taking decisions.[13]

As systematic analysis becomes increasingly utilized at all levels of government, it has been recognized that a ". . . major difficulty in evaluating the accomplishment of goals stems from the inadequate information and communication for setting program objectives."[14] MBO attacks this problem at several points. Initially, open communication is fostered. Superior and subordinate identify, discuss, and evaluate individual objectives and relate these to the broader context of the program and/or organizational objectives. Milestone charts can be used as a technique for subsequent performance evaluation. This technique is buttressed by explicit definitions and careful measurement in order to span from the process of formulation to evaluation of performance, and subsequently to the realization or reassessment of objectives.

In general, MBO strives to develop the following mechanisms:

(1) A clear and concise statement of organizational goals and objectives in relation to societal goals, and a working out of accommodations between conflicting objectives.

(2) An open atmosphere in which administrators are encouraged to make innovative contributions to the realization of organizational goals.

(3) A specification of tasks and responsibilities of individuals in reference to organizational goals.

(4) A set of standards by which individual and programmatic decisions can be evaluated in terms of their goals achievement.

(5) The provision of systematic reassessments and continued innovation in the pursuit of organizational goals.

Along these lines, MBO is integrally linked to external decision demands through increased information flow and higher levels of organizational visibility. Frank Sherwood and William Page suggest that MBO has the ". . . potential for reassuring legislators and the polity that government units actually are committed to specifying objectives and reporting progress toward them."[15]

In addition, MBO in the public sector attempts to harness the reform zeal of movements such as the New Professionalism and the New Public Administration which were discussed earlier. Under the rubric of MBO, individual administrators are given incentives to express their concern that the organization meet broader societal goals. Individuals are also granted greater resonsibility over their particular area of expertise.

MBO increases not only self-control or autonomy but also accountability. Whereas the individual has virtual self control in producing his expected results, the manager has a more well-defined overview of job responsibilities and, thus, can better hold certain areas or individuals accountable for failures and successes. While in one sense MBO advocates a certain laissez faire approach to management, it also provides the necessary feedback mechanism so that managers can quickly identify and adjust problem areas. Flexibility and adaptability to change are salient features of MBO.

To be most successful, MBO entails ". . . that the way in which a manager relates to his employees must change from a highly structured or 'bureaucratic' form of managing to a more unstructured and more democratic from of managing."[16] Certainly, this approach will be more natural to some managers than to others according to personalities and their personal theories of management. The implementation of MBO does have significant implications for the role of the manager, especially for the manager who in the classical sense sees himself in an authoritative role.

When MBO is introduced it should be in a non-threatening fashion. Care must also be taken so that managers really do understand what MBO is, its merits, and shortcomings. To the extent possible, experience should be obtained in MBO prior to implementation. Administrators must be able to anticipate problems in the initial phases of MBO if it is not to cause frustration and to be discarded prematurely. Knowledge of concepts and techniques is never sufficient; skill and practical knowledge is always necessary. Various organizations and programs will have their own unique characteristics to which the administrator must be sensitive in introducing MBO. Moreover, commitments of top-level administrators are essential to the effective implementation and operation of MBO; resistance at this level is the greatest threat. Yet, correctly applied, MBO can be an effective instrument of both responsible and responsive administration.

FINANCIAL ADMINISTRATION AND ANALYSIS

At the core of any administrative enterprise is the management of the dollars and cents (in the federal bureaucracy, the billions and millions). Yet with regard to this crucial process, there is a great deal of difference between private sector and public sector financial administration. The distinctions are myriad--the most essential perhaps is the lack of a "profit motive" in the public sector. While public organizations, particularly those of local government, are subject to severe budgetary constraints, they are seldom motivated by the bottom line of a balance sheet. Moreover, achievement in the public sector is rarely realized in financial terms. Nonetheless, the performance expectations placed upon public organizations are often just as rigorous as any leveled by the stockholders or trustees of a private corporation.

The focus of the curriculum modules in this section of the NTDS project is on some of the analytical measures designed to meet the expectations of efficiency, fiscal integrity, and program effectiveness. This focus will include a discussion of the techniques of cost-benefit and cost-effectiveness analysis, procedures for the application of performance/program budgeting in local government, and consideration of the responsibilities for capital facilities planning and debt administration as a vehicle of public service delivery.

Cost-Benefit and Cost-Effectiveness

Cost-benefit analysis is a methodology for coping with the age old problem of allocating scarce resources. In theory, the problem is quite simple; it is difficult only in practice. In theory, one merely must decide what is wanted (specification of ends), measure these wants (quantification of benefits sought), and then apply the limited means to achieve the greatest possible value of the identified wants (maximize benefits). In contemporary society, the means become public budgets, and therefore, the problem is one of maximizing benefits (once specified and quantified) for any given set of fiscal inputs (i.e., specified and quantified costs).

In recent years, concurrent with the development of program budgeting and PPBS systems, more systematic analyses of benefits and costs associated with public programs have become an increasingly important part of the budget-makers responsibilities. While it may be assumed that governments have always considered both the benefits and costs associated with various programs requiring the allocation of limited fiscal resources, these examinations often have been haphazard, with little systematic effort to quantify benefits or to include all costs and benefits appropriate to particular alternatives under consideration. Too often, the public decision-making process has been dominated by a "money first" approach, whereby only a certain amount of revenue is available and therefore expenditures are confined to this amount, or has manifested an "absolute needs" approach, whereby a given set of expenditures is deemed so essential that it must be undertaken irrespective of the costs.[17] However, due partly to the increasing scope of governmental activities and expanding interest in more systematic budgeting and partly to the development of improved techniques and computational capacity that permit more thorough evaluations, there has been a significant increase in emphasis on various cost-benefit forms of analysis.

Cost-benefit analysis in a form roughly analogous to current practice was first initiated in 1902 (Rivers and Harbors Act) for the assessment of water resource projects. It was formalized in 1936 as a result of the National Flood Control Act. Here the federal government accepted the responsibility of undertaking flood control measures whenever and wherever the "benefits to whomsoever they may accrue are in excess of the cost."[18]

In 1950 the subcommittee on Cost and Benefits of the Inter-Agency River Basin Committee published its "shoppers guide" to project benefits, better known as the "Greenbook." The Greenbook also outlined acceptable principles and procedures for determining benefit-cost ratios. While these procedures were more or less adhered to, the determination of benefits and designation of favorable ratios were often highly politicized, particularly in the water resource area.[19]

With the injections of systems analysis into the federal programs of the 1960s, cost-benefit took on a much more analytical and less political coloration. Roland McKean and others redefined cost-benefit in the terminology of systems analysis. McKean describes of component of cost-benefit analysis as follows:[20]

(1) Definition of program objectives, i.e., what achievements need to be made in order to yield the desired benefits?

(2) Identification of alternative courses of action (policies and programs) to achieve stated objectives.

(3) Estimation of costs associated with each alternative.

(4) Construction of mathematical models to assist in the estimation of benefits and costs and the subsequent choice between alternative policies, programs, or systems.

(5) Development of a criterion of preferredness or social discount rate to assist in the selection of the "best" alternative.

Cost-effectiveness is similar to cost-benefit in nearly every detail, except for the fact that cost-effectiveness involves, "a comparison of alternative courses of action in terms of costs and their effectiveness in attaining some specific objective."[21] Cost-effectiveness analysis was originally developed for military expenditures; e.g., "bang for buck" considerations. The level of performance was expressed in terms of minimum acceptable standards. This rationale was easily transferred to social programs for which the benefits were difficult to calculate in monitary terms. Cost-effectiveness analysis thus involves discovering the set of procedures which achieve a fixed social objective for the least cost. Noticibly, the establishment of these fixed objectives may depend upon the mechanisms mentioned previously under the heading of strategic planning.

To summarize the vital role which cost-benefit/effectiveness analysis serves (when properly conducted) in the policy process, four items are particularly relevant.

(1) Under even increasingly fiscal constraints, the differenciation of expediture worthy programs and projects is essential.[22]

(2) Cost-benefit/effectiveness is a simplistic device for comparing alternatives generated in the strategic planning process.

(3) Cost-benefit/effectiveness applies a time factor or discount rate in order to adjust the costs and benefits which accrue over time to a present scale of value.

Cost-benefit/effectiveness analysis provides a highly useful tool for examining the implications of pursuing one policy alternative over another. It forces the analyst to array the costs, (both economic and social) constraints, (organizational and political) and the benefits of a given course of action. It does not eliminate subjective choices, rather it attempts to explain them.[23]

Performance/Program Budgeting

The concept of performance/program budgeting combines and extends fiscal planning and control elements from the management orientation of performance budgeting and the planning orientation of program budgeting (or PPBS). In addition, it adopts the elements of accountability and personnel control from more traditional budgeting approaches (line item or objects of expenditure budgets). While this approach has not been fully operationalized to date in local government, various elements have been incorporated into local budgeting procedures. Other elements are being discussed with increasing frequency in conjunction with such concepts as zero-base budgeting, mission budgeting, and performance auditing. Moreover, cost-benefit and cost-effectiveness analyses often are applicable under performance/program budgeting in support of efforts to develop more cost-effective public policies.

Performance/program budgeting is oriented to a strengthening of the role of strategic planning in the budget process. The primary goal of performance/program budgeting is to secure more rational bases for decision-making. This is accomplished by providing: (1) increased efficiency through the analysis of data on the costs and benefits of alternative approaches to the attainment of proposed public objectives, and (2) increased effectiveness through measurements of output (performance) to facilitate a continual review of public activities designed to attain chosen objectives. As a policy device, performance/program budgeting departs from more basic models of efficiency in which objectives are fixed and quantities of inputs and outputs are adjusted to secure an optimal relationship. In performance/program budgeting, policy and program objectives may be considered as variables. Analysis is thus aimed at creating new objectives.

Performance/program budgeting focuses on aggregates of expenditures (i.e., broad program classifications which may cut across established lines of responsibility). Detailed itemizations of expenditure categories are brought into play as they may contribute to the analysis of the total system. These fiscal details may also have potential impact on marginal trade-offs among competing proposals. In performance/program budgeting, the emphasis is on comprehensiveness and on the grouping of data into categories that facilitates comparisons among alternative mixes of public expenditures.

Object classifications, as found in traditional line-item budgets, offer two distinct advantages not possessed by other types of budget systems: (1) accountability--a pattern of accounts that can be controlled and audited; and (2) information for personnel management--personnel requirements are closely linked with other budgetary requirements, and the control of positions can be used as the level to control the whole budget. These administrative features of a line-item budget (used for the documentation and accounting of both monies and personnel) are retained in the performance/program budget model, thus providing a "dual system" for policy formulation and administration.

The concept of performance budgeting grew out of the re-definition of budgeting as a management process in the thirties and forties. The terminology performance budgeting first was used by the Hoover Commission in recommending the adoption of improved budgetary techniques by the federal government. As the 1949 report of the Commission stated:[24]

> We recommend that the whole budgetary concept of the federal government be refashioned by the adoption of a budget based upon functions, activities, and projects; this we designate a performance budget. Such an approach would focus attention upon the general character and relative importance of the work to be done, or upon the service to be rendered, rather than upon the things to be acquired, such as personal services, supplies, equipment, and so on. The latter objects are, after all, only the means to an end. The all important thing in budgeting is the work or the service to be accomplished, and what that work or service will cost.

Performance budgeting has a strong management orientation; its principal objective is to assist administrators in their assessment of the work-efficiency of operating units. It seeks this objective by: (1) casting budget categories in functional terms, and (2) providing work-cost measurements to facilitate the more efficient performance of prescribed activities. Generally, its methods are particularistic, with the reduction of work-cost data into discreet, measurable units. Performance budgeting derives much of its conceptual and technical basis from cost accounting and the principles of scientific management. The budget is envisioned as a work program. As Mosher has stated: " . . . the central idea of the performance budget . . . is that the budget process be focused upon programs and functions--that is, accomplishments to be achieved, work to be done."[25]

While performance budgeting shifted the attention from fiscal inputs to performance outputs, the emphasis of this approach is on efficiency--on the allocation of scarce resources among competing claims on a least cost basis. Questions of efficiency, however, are generally defined and answered in fiscal or economic terms with minimum consideration of priorities or relative worth. This shortcoming may be observed in the continual efforts of public agencies to achieve economies without decreasing services or outputs. The focus is the elimination of waste: with fixed resources, of producing more of A without decreasing the production of B. By pretending that technical analyses--analyses which focus on efficiency--are sufficient for political decisions, decision-makers may lose the very information necessary to determine effectiveness.

Recognition of these shortcomings has led to the development of budgetary techniques and concepts that are also output-oriented but which consider the impact of resources as well as the resources themselves. These techniques make a clear distinction between efficiency and effectiveness in an attempt to supplant financial-type controls in favor of unambiguous and nonpecuniary accounting techniques to measure the output of public expenditures and investments in terms of effectiveness in achieving public goals and objectives.

Program or mission budgeting represents one such organized approach to the measurement of effectiveness. Generally speaking, a program budget has the following five major elements:[26]

(1) Identification of Goals and Objectives. This component, of course, is the essence of strategic planning, as discussed previously Strategic planning can mean the difference between success and failure in the delivery of vital public services. Unfortunately, the concepts of strategic planning are the least developed among the various modes of public planning. Goals and objectives must be translated into a time schedule for achievement, and specific resource requirements must be identified. The achievement "time-line" and resource requirements (personnel, materials and supplies, equipment, etc.) form the basis for determining fiscal commitments--the fundamental inputs of the budget process.

(2) Program Structuring. A second major component of program budgeting involves the structuring and analysis of public agency activities in programmatic terms. A program is defined as a group of interdependent, closely related services or activities which possess or contribute to a common objective or set of allied objectives. In PPBS, programs were to be structured "across-the-board," i.e., without concern for the variety of agencies that might be involved in the process of implementation. While across-the-board program structures may be an ideal to strive toward, many public agencies cannot make a meaningful transition to such a format in the short time span envisioned under PPBS. Therefore, such comprehensive structuring is viewed as a long-range rather than an immediately realizable objectives of performance/program budgeting. A significant effort must first be launched in the development of management information and program evaluation systems (MIPES) before the interdependencies of various agency activities can be examined and the goals of government structured and programmed in a more comprehensive manner.

(3) Extended Time Horizon. The extended time horizon envisioned in the formulation of a program budget is necessary to establish a long-range process which can circumvent the "crisis programming" characteristic of many public activities. This longer time horizon serves to guide the total activities of government in a more coherent and comprehensive fashion. The multi-year program plan is needed to indicate the proposed outputs of public facilities and services

according to the objectives outlined in the strategic planning stage. The magnitude of each program is determined through this phase of the budgetary process. The multi-year financial plan serves to project costs for each program as outlined by the decisions that are made. Cost estimates, outlined in varying levels of detail according to the time span covered, must be matched with estimates of revenue sources required to support the proposed programs. Only through such an examination is it possible to determine the adequacy of current sources of revenue in light of future demands.

(4) Program Analysis. Program analysis is the cornerstone of program budgeting. Through a systematic analysis of alternatives, programs are selected for multi-year plans. While program analysis may take several forms, in essence, it involves the reduction of complex problems into their component parts so that each can be studied in greater detail, followed by a synthesis of these parts back to the whole. The analytical task in program analysis involves the use of existing resources or the generation of additional resources to create new means-ends patterns to resolve conflict over problems of choice. In general, this task involves: (1) identification of questions relevant to the inquiry; (2) operationalization of vaguely stated objectives; (3) elimination of imprecise factors; (4) ascertainment of quantifiable variables; (5) specification of assumptions; (6) selection of models and other tools of analysis; (7) specification of alternatives; and (8) selection of "best" or "optimal" course of action or program.

(5) Program Updating Procedures. Through such procedures, program analysis techniques are applied to determine needed modifications and improvements once programs are implemented. Regular and systematic collection of performance measures in a management information and program evaluation system can provide public officials and managers with periodic reports by which to monitor ongoing programs and projects. Such information feedback provides managers with the mechanisms for program control and evaluation, e.g., cost-effectiveness ratios, indicating the relationship between program cost and actual program outputs, can be calculated and, if properly defined, can be used as an effective tool for program evaluation.

The performance/program budget model incorporates these five basic elements and utilizes the concept of activity classifications to gather under a single rubric all the expenditure data needed by a public manager to administer a unit or "cluster" of activities. These activity classifications are defined in end-product terms so as to orient their analysis more directly to the mission and purpose of government. By using unit cost components associated with particular activities as the building blocks for the budget analysis, these data can be "cross-walked" from the programmatic format to the more traditional control format.

Performance/program budgeting holds the potential of providing a more meaningful interface between long-range planning and decision-making and the day-to-day operations of government. As such, it is essential that public management personnel be fully involved in the further development and refinement of the concepts and techniques underlying this budgetary approach.

Capital Facilities Planning

Not all aspects of the budgetary process involve exotic calculations or nebulous societal goals. Yet, even the more work-a-day budgetary concerns can be highly perplexing. This problem is certainly evident in the planning of capital facilities and the administration of the debt resulting from efforts to finance the construction of such public improvements.

Capital facilities planning encompasses those activities of government which attempt to provide public improvements for a community in a timely and orderly manner. These improvements must be evaluated and scheduled by comparing anticipated needs with the estimated capacity of the community to support and finance these facilities and associated service programs. The problem of allocating resources for public improvements is complicated by the uncertainty of future conditions. It cannot be assumed that conditions in the community will remain static during the life span of a capital facility and, therefore, capital facilities planning must be considered as a function of changing public requirements and facility capacity. Improper scheduling for the construction of public improvements may not only impede the growth of a community, it may inhibit the delivery of adequate levels and mixes of public services.

Thus, major objective of capital facilities planning is to provide decision-makers with data on future needs and resources of the community. This information should be sufficiently reliable to justify decisions involving long-term and relatively large commitments of public resources. This emphasis on meeting growth demands does not imply the "self-fulfilling policy" mode mentioned earlier, for it is usually in situations of service crisis that communities are panicked into uneconomical investments and over-development. Comprehensive capital facilities planning can avert these crises and thus facilitate a more realistic and rational pattern of community growth.

The major problem confronting capital facilities planning is the tendency to separate decisions regarding needed public improvements from the rest of public sector requirements and programs. Public improvements support operating programs and are a critical factor to be considered in program planning and scheduling. Ideally commitments for capital facilities should be integral part of the program budget. Moak and Hillhouse point out that: "Any less comprehensive view of these processes invites the construction of projects as ends in themselves, rather than as elements of the entire process of providing governmental services."[27]

The following model of capital facilities planning attempts to develop a comprehensive planning perspective in reference to long-term public investment decisions and policies.[28]

(1) Strategic Planning. Once again, strategic planning provides the basic groundwork for the development of policy--in this case, capital facilities policy. Particular emphasis is placed upon population estimates, economic forecasts, social preferences, and other projections of community development and social expectations. This long-range planning framework must include in this application a comparable financial plan that reflects the public service and facility needs of the community beyond the limits of the traditional annual budget or even the extended horizon of the performance/program budget. Four major elements should be considered in the formulation of this long-range financial plan: (a) external factors influencing public programs, including anticipated shifts in significant demographic characteristics, projected changes in economic activities, social trends, scientific and technological changes, etc.; (b) total public service needs and demands (assumptions, standards, and criteria used to quantify and project needs and demands should be identified); (c) an evaluation of the present and future roles of various levels of government and private enterprise within designated functional areas; and (d) interagency allocation of responsibilities in terms of total public needs and demands, including recommendations regarding the elimination of significant areas of overlap through formal coordination or realignment of responsibilities.

(2) Population Forecasting. Analysis of the demographic conditions of the community is an essential element in the development of a capital facilities plan. The demand for public improvements is a function of growth; in effective capital facilities planning it is necessary to identify the elements of the population in which this growth is occurring. The population should be disaggregated as much as possible to anticipate what type of public improvements the future population will need and demand. For example, an aging population will require specialized health facilities and housing. Not only age, but income levels, household size, racial composition and any attribute of the future population that can be reliably forecasted provides information that is useful to decision makers. Identifying and forecasting the population of the community by age cohorts offers a good basis from which to develop population projections. These forecasts are not merely linear extrapolations, for many factors may cause a leveling or even decline in population as particular demographic configurations reach their peak. Assumptions are vital components of these projections and estimates. Based on factors that can be expected to affect the trends identified from past and current data, assumptions improve the validity and reliability of forecasts by considering the factors

of change in a community. As assumptions are re-examined in light of more refined data, adjustments must be made in calculations.

(3) Economic Projections. Information concerning economic conditions of the community is critical to the development of an effective capital facilities plan. Economic forecasts also are a factor in calculating population projections, since assumptions concerning population growth or decline are correlated to the expected economic activity of an area. For example, if a locality is experiencing rapid industrial growth, it will produce a wave of immigration of workers. The age and socio-economic characteristics of these in-migrants must be forecasted by population projections. Capital facilities planning then translates these projections and forecasts into community needs for physical facilities. If the industrial growth of an area is expected to attract young workers and their families, this will result in increased demands for educational services and schools as the public improvements to support these services. Conversely, if the municipality is not responsive to these demands of the community, it will result in negative feedback on the growth and economic activity of a municipality. Information concerning future economic conditions is essential in determining the financial capacity of a municipality to absorb capital expenditures. Economic indicators, such an employment data, cost of living indices, information regarding disposable income, building activity data, bank deposits, etc., can be built into trend analyses and used with assumptions to suggest the future capacity of a jurisdiction to provide public improvements to meet the demands.[29]

(4) Program and Financial Planning. It is important to evaluate and schedule public improvements in harmony with the scheduling of public service programs. Without such coordination, inefficient use of resources may result, as the availability of public improvements lags behind the needs of service programs. On the other hand, public improvements provided prior to their need represent resource commitments that could be used more effectively for other projects. Efficiency demands that program planning and capital facilities planning be coordinated in their mutual objective of delivering public sector services. Capital facilities, as an integral sub-set of community financial administration, is dependent upon careful financial planning. Financial planning by local governments has been complicated by the "fiscal crisis"--the imbalance between the rates of increase in revenues and expenditures of local governments. Demands for services and facilities increase and change as a function of growth and socio-economic characteristics of the population. Revenues tend to increase at a slower rate, creating an ever-widening fiscal gap. This inelasticity of local government revenues is attributable, in part, to the tax structure which forces local governments to rely heavily upon property taxes. Present pressures have proven property taxes to be inflexible and unresponsive in meeting the increasing demands placed upon the public sector.

(5) Revenue and Expenditure Analyses. When local governments are struggling to "break even", it is difficult to impress decision-makers with the necessity of planning ahead. While information gathered through various projections and estimates can give credibility to the arguments for the future needs of the community, the fiscal squeeze can severely delimit alternatives available to local government for financing not only capital facilities but also operating programs. Tools such as revenue/expenditure analysis have been applied to foster a comprehensive financial planning process sensitive to this plight.

Revenue analysis disaggregates the sources of revenue into appropriate categories, with the analysis of each category including not only the estimate of dollar receipts but also the percentage of the total revenues that each category represents. Based upon these disaggregated figures, trends in absolute and relative increases and declines can be calculated for each category. The disaggregation of revenue dollars according to sources provide a more accurate picture of the current financial situation of a community and contributes to the accuracy of forecasts and projections.

Expenditure analysis also requires disaggregation of data into major expenditure categories. Data from past fiscal years provide a basis for the calculation of rates of increase or decrease, and subsequently, for the computation of multipliers appropriate to each expenditure category. Future levels of expenditures can be derived from these multipliers which also can be adjusted based upon assumptions of changes in population characteristics, inflation rates, and so forth.

(6) Debt Administration. Financial planning is essential in anticipating the capacity of a locality to absorb the debt impacts incurred in the financing of capital facilities. Where shortfalls of revenues can be foreseen, changes in financial policies must be considered: taxes raised, expenditure curtailed, new revenue sources sought. Since the life span of public improvements usually ranges from fifteen to twenty years, debt financing is consistent with the benefit principle of public finance. Persons who will use the facility in future years (receive the benefits) should also bear a portion of the burden of payment. Jurisdictions must be cautious, however, so that the term of debt does not exceed the useful life of the facility. Determining the type of bonds, term of their maturity, and other optional features, therefore, is an important part of debt administration. The interest to be paid on municipal bonds must be an integral consideration in determining appropriate debt forms, since interest payments increase the total cost of the facility as the maturity period lengthens. Debt should be incurred only within the financial and administrative capacity of the municipality to manage it effectively and efficiently.

In the final analysis, the theory of capital facilities planning still exceeds the practices of most local governments. However, the outlook for the increased utilization of these planning mechanisms are encouraging. Improvements in budget techniques among localities have promoted the utilization of capital budgeting, programming, and planning. Also, the "fiscal crisis" demands planning and informed decisions to produce the most efficient and effective projects and programs. Mistakes or misjudgments are expensive. As techniques and skills improve, so does the potential contributions of capital facilities planning to local governments. Capital facilities planning cannot solve all of the problems of municipalities, but it can be a valuable tool in providing the community with the best possible government services. Together with strategic, program, and financial planning, capital facilities planning provides mechanisms and processes by which local government can anticipate and plan for its role in the future community so as to be maximally responsive, effective, and efficient in the execution of this role.

Implementation/Evaluation > all [illegible]

The final set of modules included in this curriculum package is a mixed-bag of devices for aiding in the implementation and evaluation processes. Some have suggested that implementation is where analysis leaves off and administration (in the pure sense) begins. As this discussion will illuminate, such an artificial distinction is useless and may be dysfunctional to effective urban management. Implementation strategies at once direct and account for resource allocations. Likewise, the evaluation strategies considered here are based upon prerequisite management decisions. The three devices brought together under this mixed perspective are: (1) Policy/Program Implementation, (2) Performance Auditing, and (3) Productivity Measurement.

These particular items have been selected from the vast array of management/measurement strategies because of their general continuity with the other analytical processes discussed heretofore. This discussion cannot hope to do justice to either of these subfields of policy analysis (implementation/evaluation). Yet, to the extent that techniques considered here provide a bridge to these larger realms as well as demonstrate devices readily applicable to the planning and budgeting strategies presented, then the endeavors of this curriculum package have achieved closure.

Policy/Program Implementation

Pressman and Wildavsky, in the title of their study, *Implementation: How Great Expectations in Washington Are Dashed in Oakland*, convey a portion of the frustration involved in policy/program implementation. Getting things to work properly is often a patchwork arrangement, at best, much like the "Rube Goldberg" mechanisms they portray in their text. While even meticulous analysis cannot circumvent all the "foul ups", it can reduce the level of ineffectual activity and resulting wasted time and resources.

Broadly defined, policy or program implementation is concerned with deciding in advance the goals and objectives to be sought, what should be done, who will do what, and how various activities will be accomplished. In addition to deciding what should be done and organizing physical and fiscal resources into a cohesive unit, implementation is concerned with the motivation of men and women in such a way as to achieve the stated policy or program objectives. Thus, implementation is a process of coordination and, at times, manipulation of political, physical, fiscal, and human resources. Such concerns require that attention be given to multiple actions over an extended period of time. In this respect, the urban manager must have timely answers to questions that arise during the implementation process itself. A failure on the part of the manager to have these answers could be costly or even disasterous. In order to maintain control, the urban manager must develop a dynamic system for the planning, scheduling, delivery, monitoring, and evaluation of program operations--one that produces the best possible initial operations plan while at the same time allowing for reaction to changing conditions.

The implementation process can be broken down into five basic stages: (1) clarification of programmatic goals and objectives, (2) task delineation, (3) organizing, planning, and scheduling, (4) delegation of responsibility, and (5) follow-up evaluation. These processes are discussed in greater detail below.

(1) Clarification of Programmatic Goals and Objectives. A distinction should be made between strategic planning and operations planning, the latter being an integral part of the processes of policy/program implementation. Strategic planning involves the selection of overall goals and objectives and the development of strategies (including policies and guidelines) for achieving those objectives. Operations planning is concerned with tactics of performance and the use of resources to achieve the overall objectives which are integral parts of strategic plans. Effective and comprehensive strategic planning can mean the difference between success and failure in the delivery of vital public services. Effective and efficient operations planning always means the difference between "on time" and "late". The first step in operations planning involves the translation of broad goals and objectives into more specific programmatic targets. In this process, issue paper techniques and MBO procedures can provide useful mechanisms for defining the problems of implementation in terms of task orientation.

(2) Task Delineation. Duplication of effort, confusion, backtracking, and delays can only be avoided by dividing the policy or program implementation task into specific, clear-cut, and logical details and sequential steps, and by analyzing the methods, time requirements, and cost of each step. Persons concerned with the same activity should be grouped together, and all activities should be arranged so that each is a step toward the overall completion of the task. Having broken tasks down to sub-units, the crux of delineation is efficient reassembly. Methods drawn from management science, such as the Critical Path Method (CPM) and Program

Evaluation and Review Techniques (PERT), forms of network analysis, can be highly useful in this reconstruction. CPM arrays the time elements of a program or project for "minimum slack" or slippage and can indicate the sequences in which sub-tasks should be initiated. PERT provides even more sophisticated methods for assessing time and cost requirements of complex tasks requiring the effective coordination of highly interrelated activities.[30]

(3) Organizing, Planning, and Scheduling. Providing the data for PERT and CPM is carried out through a variety of simultaneous processes such as organizing, planning, and scheduling. Organizing refers to the structuring and of critical time and resource questions. Out of this organization process emerges the operations plan which serves to define the proper sequence of activities to be performed. The operations plan goes beyond organization by attempting to assign priorities and focuses on the utilization of resources and the location of funding. It is at this point that scheduling begins to be integrated into the planning process. Scheduling is largely concerned with the allocation of resources, based upon programmatic objectives, and the determination of the calendar dates or times of resource utilization according to the total assigned resource capacity of the program.

(4) Delegation of Responsibility. Whenever possible, the manager should try to avoid doing everything himself. To a large extent, the amount of cooperation that the manager will receive from staff will depend on how much he or she is willing to let them program their own specific tasks. The manager must avoid the hazards of "over planning" the tasks of others and must be willing to use the concept of program control known as management by exception. This control concept is based on three premises: (1) management is vitally concerned with coping with change, (2) the future can never be predicted exactly; consequently, estimates will always differ from reality, and (3) it is important to provide responses to a given situation as soon as possible. These premises define dynamic control and further define exceptions by not defining them; that is, exceptions are the deviations or difference between what is anticipated will happen (or what is scheduled to happen) and what actually does happen. Dynamic control, then, is responding with corrective action within an appropriate time to make such action useful and meaningful. The timeliness of corrective action can be increased if staff members are involved in the programming of their specific tasks and given responsibility for monitoring the effectiveness of their own activities.

(5) Follow-Up Procedures. Before beginning policy or program implementation, the manager should have a definite plan for checking to see that activities are properly, effectively, and efficiently being accomplished. A follow-up plan of this nature will allow the administrator to determine if implementation is behind schedule and, if it is, to determine why and the possible steps for correcting the situation. In addition to aiding the manager in corrective actions, the follow-up plan should allow the decision-maker to evaluate the

efficiency and effectiveness of the overall implementation. In any event, follow-up activities must be forward-looking in the sense that they attempt to assure that policy or program objectives will be achieved; that the implementation process is being carried out as planned, and that the public is being well served.

The policy-making and implementation process is continuous--it has no clear-cut beginning and seldom if ever is it bound to the formal framework of government.[31] Under such circumstances, the role of the manager is both political and administrative. The managerial role involves activites of supervision and control of policies or programs. The manager should find out everything he or she can about the activities which will be involved in the process (including socio/political ramifications). Therefore, experts, private groups, and others must be consulted so as to obtain both their information and advice. Implicit in the consultation stage are the bargaining and maneuvering activities which take place so as to resolve or at least limit conflicts resulting from differing values and priorities. Once this has been done, the manager, along with those who must carry out the decisions, must organize, plan, and schedule a general process of implementation (prior to the actual implementation itself) which is clear, concise, and leaves the specific details of each activity to the specialists.

No manager can operate successfully on intuition alone. The implementation of a policy or program cannot be successful, efficient, or effective unless there is some sort of plan that permits the manager to exercise dynamic control throughout the entire process.

Performance Auditing

Policy evaluation have become the hue and cry of local governments in recent years. Given their limited and income inelastic sources of revenue (largely property taxes) it is essential that they discover not only how but how well their money is being spent. This concern for fiscal effectiveness has prompted the rise of various laws known as "Sunset Legislation." Stated simply, program "Sunset" involves a review process which eliminates ineffective programs, policies, and sometimes entire agencies.

Bruce Adams described the ideal Sunset provisions as follows:[32]

(1) Programs and agencies should automatically terminate at a certain date unless affirmatively re-created by law.

(2) Termination should be periodic (e.g., every seven or nine years) in order to institutionalize the program review process.

(3) Like all significant innovations, the Sunset mechanism should be phased in gradually.

(4) Programs and agencies in the same policy area should be reviewed simultaneously in order to encourage coordination, consolidation, and responsible pruning.

(5) Existing entities (e.g., budget and planning offices and legislative auditors) should undertake the preliminary program evaluation work, but their evaluation capacities must be strengthened.

(6) The sunset proposal should establish general criteria to guide the program evaluation process.

(7) Substantive preliminary work must be packaged in manageable decision-making reports for policy-makers to use in the exercise of their professional judgment.

(8) Substantial legislative committee reorganization is a prerequisite to meaningful Sunset review.

(9) Safeguards must be built into Sunset Laws to guard against arbitrary termination.

(10) Public participation is an essential part of the Sunset process.

It is noteworthy that Sunset places a great deal of emphasis on existing audit and budgetary review processes. Undoubtedly, new strategies will be needed to augment existing procedures; Performance Auditing constitutes just such a procedural modification.

Auditing is a process for monitoring the flow of dollars and cents. The traditional financial audit involves an examination of the accounting records of governmental units and the underlying systems of data processing and internal control. The objective is to verify that all financial transactions have been properly handled and recorded in compliance with legal restrictions so that statements produced from those records accurately reflect the financial management of the public officials entrusted with these matters. The financial audit ordinarily will involve systematic examination of the source documents, records, and procedures relating to all financial transactions. For example, in examining the property tax revenues of a city, the auditor will use a number of interlocking checks to confirm that property tax revenues, collections, receivables, and related allowances are accurately and fairly presented. Similar procedures covering other types of transactions and related balance sheet items enable the auditor to form an opinion of the statement as a whole.

Despite seemingly clear-cut requirements of the independent audit, there is much confusion in the drafting of city charters and in the establishment of appropriate financial organizations within local government. Frequently there is a failure to distinguish between two kinds of audit which are necessary to check the financial operations of a city. One is the current audit performed by the controller or other designated official within the department of finance. It is often called the pre-audit, since it is made prior to the payment of all claims. It likewise extends to a daily check of all revenues and receipts of the city government. This audit serves as the basis for the entries in the controller's accounts and is the only valid and proper method of accounting control. The independent audit, often called the post audit is distinguished from the current audit by the fact that it is performed after the financial transactions have been completed and the necessary accounting entries made. It is in the nature of a review of these transactions and entries.

Although the financial audit checks the correctness of the records and the legal propriety of the transactions, questions of the value of the activities and the efficiency of their operations are left unanswered. These questions have led to the development of performance auditing (also known in some quarters as operational or management auditing). In addition to a financial audit, it includes a review of management policies and administration. The performance audit attempts to identify opportunities to reduce costs, increase efficiency, and improve program effectiveness. It also serves to extend and improve management control.

A major factor in the increasing prevalence of performance auditing has been the growth of professionalism in governmental administration and the resulting increase in emphasis on quantitative and qualitative analysis. Moreover, with growing public awareness of the impact of the government sector, managers are called upon more often to report and justify their administration of public resources.

The rise of the grant-in-aid and the demands of the grantors of funds for evidence that the monies are being spent both honestly and wisely gives additional impetus to performance auditing. The so-called "Yellow Book" issued in 1972 by the U.S. General Accounting Office points to the direction for governmental auditing by emphasizing that a complete audit should cover three elements:[33]

(1) Financial Compliance. This aspect is very similar to traditional audit requirements. It insists that operations are properly conducted and that financial reports be fairly represented. Moreover, it maintains the application of specific legal stipulations and management regulations.

(2) Economy and Efficiency. This set of criteria seeks to determine whether a given government entity is using its resources (personnel, property, space, etc.) in an economical and/or efficient manner. In addition, this test strives to discover the causes of inefficiencies in management information systems, administrative procedures, or organizational structure.

(3) Program Results. This final element has perhaps the most far reaching implication. Here the auditor is concerned with how much "bang" has been developed for the "bucks" spent. In essence, this process inquires as to whether desired results and benefits are being achieved. An assessment is also made as to whether or not the agency or government entity has considered other alternatives which are more cost-effective.

These elements of cost-effectiveness are, of course, hampered by the same constraints discussed earlier in reference to cost-benefit/cost-effectiveness analysis. Moreover, the question of achieving meaningful performance measures for highly nebulous and intangible social programs remains germane. Nevertheless, acceptable standards of performance auditing are very likely to emerge in the wake of the federal decision to apply the test to local grant in aid programs.

Productivity Measurement

In recent years productivity has become as important in public sector management than it is in the private sector. In one regard it may be even more important. The private sector being highly capital intensive (mechanized) can usually justify increased wages with increased productivity. The public sector which is largely labor intensive has attempted to remain competitive with private enterprise in terms of wages, yet its level of productivity is somewhat a mystery.

Stated briefly, productivity in the public sector is "the efficiency with which resources are consumed in the effective delivery of public services."[34] This definition includes elements of quality as well as quantity. However, it is too general to be directly applied in a practical manner. In more usable terms, productivity measurement may be said to involve the relationship of outputs (perferable final outputs) and inputs, usually expressed as a ratio.

The major difficulty in implementing productivity programs is measurement. As noted above, both input and output measures are required to determine productivity. Input measurement does not present a significant problem. However, measuring public sector output is exceedingly difficult. One reason for this difficulty is that government agencies are generally engaged in performing various types of services, the nature of which are highly intangible, such as welfare. The lack of physical outputs is less problematic in the case of private sector services because productivity can be estimated by use of prices associated with these services (e.g., in terms of dollars worth of output per man hour, for example). However, since public services are generally provided without direct charge, this method of productivity measurement is not applicable.

This measurement has led to the establishment of two distinct classes of output:

(1) Activity Measured. This output is a direct service activity such as police patrols.

(2) Result Measured. This output is a indirect manifestation assumed to be causally connected to the direct output such as crime rate.

The simplest type of productivity measurement is to allow input or output measures to serve as proxies for productivity.

Another method uses a ratio of an output measure (either final or direct) and an input measure (usually labor and general expeditures). Improvements in management techniques and/or money-saving measures taken by government agencies have also been used as indicators of increased productivity, primarily in the context of New York City's productivity program. With the exception of output/input ratios, the above measures are not really satisfactory indicators of productivity. They have come into use in response to the need for proxy measures in cases where difficulties in measuring outputs and/or inputs have proved insurmountable.

An alternative approach to estimating productivity which does not require output measurement has been devised. This approach utilizes changes in expenditure data, which is divided into three components: cost, workload, and a third residual factor reflecting changes in quality and productivity.[35] The distinct advantages to this approach are the availability of expenditure information and ability devise proxy measures for cost and workload.

Implementation of productivity programs poses another set of problems. These might be summarized as follows:

(1) *Organization Type and Level*. Implementation of productivity may need to be considered on a city-wide as well as agency-wide basis. It may even be advisable to establish a separate agency to oversee productivity.

(2) *Costs of Implementing Productivity*. The costs to be considered in implementing productivity measures are both monetary and the disruptive effects upon agencies. In the long run it may not be worth the sharing it produces.

(3) *Administrative Resistance*. As suggested earlier in our general discussion of policy evaluation, agencies may simply not want to be evaluated. Thus, they might make conscious efforts to undermine such a program.[36]

The growing fiscal difficulties of many local governments indicates a need to discover methods for reducing expenditures, without reducing public services. Productivity improvement in provision of public services is one way of achieving this goal. However, there are difficulties involved in improving public sector productivity, not the least of which is defining and measuring productivity itself.

SUMMARY AND CONCLUSIONS

This brief overview of the curriculum module topics cannot hope to provide more than a glimspe of their actual content. Moreover, the case studies and scenarios used to demonstrate these various techniques have a much greater illustrative capacity. Nevertheless, it is hoped that sufficient information was provided as to display the extensive utility of these devices.

For summary purposes, it may be suggested that the processes for formulating public policies include seven basic stages, as follows:

(1) Assessment of needs and screening of public demands and wants.

(2) Identification and clarification of public problems and issues.

(3) Definition of problem constraints arising from the decision environment, identification of the problem parameters that define feasible solution sets, and clarification of organizational (system) objectives and expectations.

(4) Formulation, analysis, and evaluation of policy alternatives and related courses of action.

(5) Definition of a "best" or optimal policy and the modification of this policy to gain acceptance.

(6) Conversion of policy into a series of action-oriented decisions leading to policy/program implementation.

(7) Monitoring of performance and evaluation of policy/program impacts.

The various concepts and techniques covered by the curriculum module topics in this segment of the NTDS Urban Management Curriculum Development Project have application to these seven basic stages of the public policy formulation process, as illustrated in Figure 2 on the following page. It is essential to note that the length of each line in this diagram represents the sequential development rather than accounting for all of the residual parameters.

The ability of policy-makers and policy analysts to assess the overall needs of a community and to screen public demands to determine priority action requirements is highly dependent upon the structural configuration of the policy system. A well-developed structure--one in which there are extensive couplings among critical components--will be highly sensitive to public needs, wants, and demands. On the other hand, a less well-constructed system may fail to provide the necessary awareness of unsettled situations, and subsequently their accompanying problems. Thus, this stage in the policy formulation process can be likened to an early warning device--the system is alerted to the possible impingment of some policy demanding situation and can

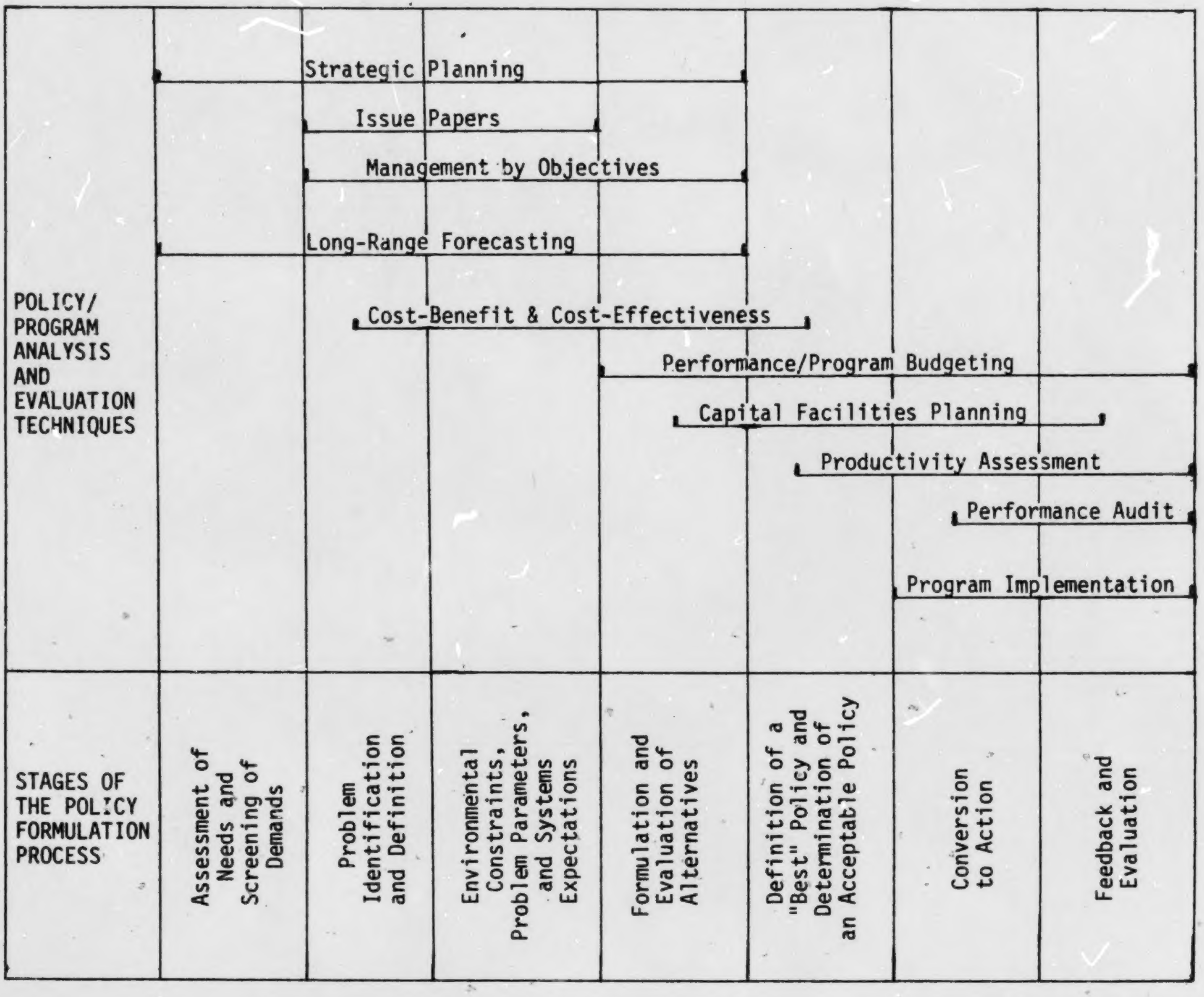
POLICY/ PROGRAM ANALYSIS AND EVALUATION TECHNIQUES
Strategic Planning
Issue Papers
Management by Objectives
Long-Range Forecasting
Cost-Benefit & Cost-Effectiveness
Performance/Program Budgeting
Capital Facilities Planning
Productivity Assessment
Performance Audit
Program Implementation
STAGES OF THE POLICY FORMULATION PROCESS
Assessment of Needs and Screening of Demands
Problem Identification and Definition
Environmental Constraints, Problem Parameters, and Systems Expectations
Formulation and Evaluation of Alternatives
Definition of a "Best" Policy and Determination of an Acceptable Policy
Conversion to Action
Feedback and Evaluation

Figure 2. Application of Module Techniques to the States of the Policy Formulation Process.

be readied to take appropriate action to remedy the attendant problems and issues. In this connection, the techniques of strategic planning provide the policy analyst with a substantial set of mechanisms for increased sensitivity to pending policy/decision requirements.

Attempts to discover the relevant facts about a problematic situation and to define and delimit the nature of the problem--its environmental constraints, parameters, and the expectations of public organizations that will be called upon to implement action programs to resolve identified problems--can also be facilitated by the mechanisms of strategic planning, aided by issue papers, techniques, and the framework provided by management by objectives procedures. This stage of the policy formulation process parallels the construction of a regulator in systems theory terms, i.e., the forming of a mechanism R, so that when R and T (the environment of the system) are coupled, they will act to keep the overall system within some set of desirable states--to maintain stability--in the face of an impinging policy demand. Long-range forecasting techniques also have application in this and in the previous stage of the process.

A statement of the policy problem and an identification of the conditions which the solution must meet, plus a sufficiency of relevant facts, may then be used to suggest relevant policy alternatives--the fourth stage in the process. Most public policy decisions involve stochastic situations, and therefore, activities in this stage of the process evidence "seek and find" or "trial and error" behavior characteristics. This search process can be organized and assisted by the analytical framework of performance/program budgeting and the techniques of cost-benefit and cost-effectiveness analysis.

In the fifth stage, available policy alternatives are tested in an effort to arrive at a "best" or maximal solution. Here again, the organizational framework of performance/program budgeting, the longer range perspectives provided by capital facilities planning, and the analytical procedures of cost-benefit and cost-effectiveness approaches can assist immeasurably in the search for a "best" solution. This policy solution must then be modified to take account of adjustmens and compromises necessary to effectuate the chosen courses of action in light of the resources available and the expectations of the system. Out of this stage of the process emerges an optimal policy, given the political realities of the situation.

In the sixth stage, policy is converted into action by making specific assignments of responsibilities. This assignment, in turn, may require adjustments in the structural configuration of the system based on an assessment of the productivity of various components within the organizational units that will implement the action programs. In fact, the structural configuration of the system may be altered at any time during the course of the policy formulation process--this alternation may be necessary to achieve an acceptable policy decision (one capable of implementation).

Feedback occurs, intentionally or unintentionally, at many stages in the process. Much of this feedback is internal to the process, resulting in a recycling of a given stage in order to achieve further refinements and modifications. Information monitoring and reporting are particularly important, however, after a policy decision has been reached in order to provide continuous testing of expectations against actual events. Even the best policy decision has a high probability of being wrong; even the most effective ones eventually become obsolete. Failure to provide for adequate feedback is one of the primary reasons for persisting in a course of action long after it has ceased to be appropriate or rational. As Drucker has observed, unless decision-makers build their feedback around direct exposure to reality, their decisions may result in a sterile dogmatism.[37]

A basic aspect of the policy formulation process is the development of a predictive capacity to identify changing conditions that might necessitate modifications in the selected courses of action. In this context, the techniques and procedures of performance auditing, productivity assessment, performance/program budgeting, and program implementation can provide significant assistance in the evaluation of performance and policy impacts. Evaluative controls should be developed for a given policy by: (1) defining what constitutes a significant change for each variable and relationship that serve components in the policy decision, (2) establishing procedures for detecting the occurrence of such changes, and (3) specifying the tolerable range within which a policy can be modified and beyond which new solutions must be sought.

Although the preceding model is presented in seven distinct stages, it would be misleading to assume that policy problems are so obliging as to permit an easy, logical sequence of attention. As Joseph Cooper has observed:[38]

> (Problems) conceal their true nature so that half-way down the path of a decision you may find that you must retrace your steps for a new beginning. Or you may have alternatives for decision presented to you which, in your belief, are not the only or the best possible courses. This, too, will send you back to the beginning.

Policy alternatives usually are not created by moving in an orderly sequence from the first to last stage. It is not uncommon for a new alternative to occur from time to time while data about the problem are still being collected. Moreover, in a complex situation, different phases of the process may develop at different rates. For example, the stage of alternatives may be reached for one aspect or subsidiary problem of a complex problem situation, while other parts of the same problem are still in the stage of definition and analysis. Nevertheless, it is necessary to approach the task of public policy formulation in an orderly fashion in order to adequately analyze the problems and issues and to uncover meaningful and useful insights as to their resolution. The concepts and techniques outlined in the curriculum modules that follow this overview can provide the policy analyst, the urban manager, and the policy-maker with major components of the analytical framework necessary to achieve more effective, efficient, and responsive policy decisions.

Throughout the discussion, references have been made to the integral interrelationships between these analytical processes; hopefully, this connecting thread was somewhat readily apparent, necessitating only a cursory re-examination here. Basically, the entire process might be described as a systematic redirecting of local resources to a constantly evolving set of societal priorities. Initially, this entails aiding decision-makers and the public in the articulation of goals and objectives and their translation into programmatic alternatives. In turn, alternatives are assessed and narrowed to specific action commitments. These commitments are then interfaced with budgetary and evaluative techniques in order to determine the following items:

(1) What level of effectiveness will meet societal expectations.

(2) How said effectiveness will be assessed.

(3) What procedures will create the most efficient pursuit of said effectiveness.

Concurrent analyses attempt to predict and reduce the impact of socio-political and organization constraints upon systematic development. The resulting procedures schedule, coordinate, and motivate administrative process. Meanwhile, general effectiveness is being calculated from task and sub-task effectiveness. As results are produced impacts are assessed, both in terms of internal criteria and external feedback. In short, Policy/Program Analysis, Budgeting, Implementation, and Evaluation is a "cybernetic" process. In essence, each element in this process draws upon the methodological and information contribution of the previous stage, thus drawing out its impact throughout.

This interdependency does not imply that each device is unable to stand on its own merits. Singularly they constitute a substantial enhancement of the level of analytical capability, collectively they constitute a vast improvement of the entire administrative policy process. Whether one choose to use all or merely some of these analytical tools, they are likely to produce a noticible departure from the "seat of the pants" programs and policies of the past.

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